CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

ORDER NO. R2-2002-0097

NPDES PERMIT NO. CA0037753

WASTE DISCHARGE REQUIREMENTS FOR:

SANITARY DISTRICT NO. 5

TIBURON, MARIN COUNTY

September 18, 2002

TABLE OF CONTENTS

LIST OF TABLES

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

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REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

SANITARY DISTRICT NO. 5

WASTEWATER TREATMENT PLANT

TIBURON, MARIN COUNTY

Findings

The California Regional Water Quality Control Board, San Francisco Bay Region, (the Board) finds that:

1. *Discharger and Permit Application.* Sanitary District No. 5 (the Discharger), has applied to the Board for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

Facility Description

2. *Facility Location, Service Area, Population, and Capacity.* The Discharger owns and operates a wastewater treatment plant (WWTP), located at 2001 Paradise Drive, Tiburon, Marin County, California. The WWTP provides secondary-level treatment for domestic wastewater from the Town of Tiburon, the City of Belvedere, and unincorporated areas in their general vicinity. A location map of the Discharger's facilities is included as Attachment A of this Order. The Discharger's service area has a current population of approximately 9,000. The WWTP has an average dry weather design flow of 0.98 million gallons per day (MGD), and can treat up to 2.3 MGD during wet weather. When flows exceed 2.3 MGD, the activated sludge and secondary clarification processes may be partially bypassed, with the final effluent being a blend of disinfected, primary-treated effluent and disinfected, secondary-treated effluent, to avoid hydraulic overload of the activated sludge process and associated solids inventory washout. A process flow diagram is included as Attachment B of this Order.

3. *Discharge Location – Central San Francisco Bay.* Treated, disinfected and dechlorinated effluent from the WWTP is combined with treated, disinfected and dechlorinated effluent from the Sewerage Agency of Southern Marin, and the combined effluent is discharged into Raccoon Straits in Central San Francisco Bay. The combined effluent is discharged through a submerged diffuser at latitude 37 degrees 52 minutes 12 seconds North and longitude 122 degrees 27 minutes 5 seconds West. The submerged diffuser is 840 feet offshore at a depth of 84 feet. The Discharger claims, based on studies probably conducted in the 1980s, that its effluent receives an initial dilution of 1400 to 1 (1400:1). This Discharge is classified by the Board as a deepwater discharge.

4. This discharge was previously governed by Waste Discharge Requirements Order No. 95-187 adopted by the Board.

5. The U.S. Environmental Protection Agency (U.S. EPA) and the Board have classified this discharge as a major discharge.

Treatment Process Description

6. *Treatment Process.* The discharger's treatment process consists of primary sedimentation, biological treatment using activated sludge, secondary sedimentation, chlorine disinfection and dechlorination.

7. *Solids Treatment, Handling and Disposal.* Solids removed from the wastewater stream are thickened, anaerobically digested, and then dewatered by a belt filter press. The thickened and dewatered solids are delivered to Redwood Sanitary Landfill for disposal. During 2001, the WWTP delivered 435 tons of biosolids to Redwood Sanitary Landfill.

Treatment Plant Stormwater Discharges

8. *Regulations.* Federal Regulations for stormwater discharges were promulgated by the U.S. EPA on November 19, 1990. The regulations [40 CFR Parts 122, 123, and 124] require specific categories of industrial activity (industrial stormwater) to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial stormwater discharges.

9. *Exemption from Coverage under Statewide Stormwater General Permit.* The State Water Resources Control Board's (the State Board's) statewide NPDES permit for stormwater discharges associated with industrial activities (NPDES General Permit CAS000001- the General Permit) was adopted on November 19, 1991, amended on September 17, 1992, and reissued on April 17, 1997. The WWTP is not required to be covered under the General Permit because all stormwater from within the WWTP area is contained and treated along with regular wastewater flows to the WWTP.

Regional Monitoring Program

10. On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement a Regional Monitoring Program for the San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region, under authority of section 13267 of California Water Code, to report on the water quality of the San Francisco Bay Estuary. These permit holders, including the Discharger, responded to that request by participating in a collaborative effort, through the San Francisco Estuary Institute (formerly the Aquatic Habitat Institute). This effort is known as the San Francisco Bay Regional Monitoring Program for Trace Substances (the RMP). The Discharger has agreed to continue to participate in the RMP, which includes collection of data on pollutants and toxicity in water, sediment and biota of the estuary.

Applicable Plans, Policies and Regulations

Basin Plan

11. The Board adopted a revised *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan) on June 21,1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Board on July 20, 1995 and by the Office of Administrative Law (OAL) on November

13, 1995. A summary of the regulatory changes is contained in Title 23 of the California Code of Regulations, Section 3912. The Basin Plan identifies beneficial uses and water quality objectives for waters of the state in the Region, including surface waters and groundwaters. The Basin Plan also identifies discharge prohibitions intended to protect identified beneficial uses. This Order implements the Basin Plan.

Beneficial Uses

12. Beneficial uses for the Central San Francisco Bay receiving water, as identified in the Basin Plan (Table 2-3 on pg. 2-15), and based on known uses of the receiving waters in the vicinity of the discharge, are:

- Ocean Commercial and Sport Fishing
- Estuarine Habitat
- Industrial Service Supply
- Fish Migration
- Navigation
- Industrial Process Supply
- Preservation of Rare and Endangered Species
- Water Contact Recreation
- Non-contact Water Recreation
- Shellfish Harvesting
- Fish Spawning
- Wildlife Habitat

State Implementation Policy (SIP)

13. The State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan or SIP) on March 2, 2000 and the OAL approved it on April 28, 2000. In a May 1, 2001 letter, the U.S. EPA approved ". . . those portions of the [State Implementation] Policy that are subject to EPA's water quality standard approval authority under section 303(c) of the CWA [the Clean Water Act] . . ." The U.S. EPA approved SIP Sections 1.1 (applicable priority pollutant criteria and objectives); 1.4.2 (mixing zones and dilution credits); 2 (through 2.2.1) (compliance schedules, except as noted below); 5.2 (site-specific objectives); 5.3 (exceptions) and Appendices 1 and 3. The letter indicated that the U.S. EPA would comment on NPDES permit-related provisions separately. The letter also indicated that the longer TMDL-related compliance schedule provisions continue to be under U.S. EPA review.

The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the Federal Clean Water Act. The SIP establishes implementation provisions for priority pollutant criteria promulgated by the U.S. EPA through the National Toxics Rule (NTR) and California Toxics Rule (see Finding 14, below), and for priority pollutant objectives established by the Regional Water Quality Control Boards (Regional Boards) in their water quality control plans (Basin Plans). The SIP also establishes monitoring requirements for 2,3,7,8-TCDD equivalents, chronic toxicity control provisions, and Pollutant Minimization Programs.

California Toxics Rule (CTR)

14. The U.S. EPA published the *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* on May 18, 2000 (Federal Register, Volume 65, Number 97, 18 May 2000, generally referred to as the California Toxics Rule or the CTR). The CTR specifies water quality criteria for numerous pollutants, some of which are applicable to the Discharger's effluent discharges.

Other Regulatory Bases

15. Water quality objectives, criteria and effluent limitations in this permit are based on:

- the SIP;
- the plans, policies, water quality objectives, and criteria of the Basin Plan;
- the CTR;
- Quality Criteria for Water [EPA 440/5-86-001, 1986] and subsequent amendments, (the U.S. EPA Gold Book);
- applicable Federal Regulations [40 CFR Parts 122 and 131];
- the NTR, as promulgated [Federal Register Volume 57, 22 December 1992, page 60848] and subsequently amended;
- 40 CFR Part 131.36(b) and amended [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];
- the U.S. EPA's December 10, 1998 National Recommended Water Quality Criteria compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364]; and
- Best Professional Judgment (BPJ) as defined in the Basin Plan.

16. In addition to the documents listed above, other U.S. EPA guidance documents upon which BPJ was developed include in part:

- U.S. EPA Region 9 *Guidance For NPDES Permit Issuance*, February 1994;
- *Technical Support Document for Water Quality Based Toxics Control* (March 1991) (TSD);
- *Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria*, October 1, 1993;
- *Whole Effluent Toxicity (WET) Control Policy*, July 1994;
- *National Policy Regarding Whole Effluent Toxicity Enforcement*, August 14, 1995;
- *Clarifications Regarding Flexibility in 40 CFR Part 136 Whole Effluent Toxicity (WET) Test Methods*, April 10, 1996;
- U.S. EPA Regions 9 & 10 *Guidance for Implementing Whole Effluent Toxicity Programs Final*, May 31, 1996;
- *Draft Whole Effluent Toxicity (WET) Implementation Strategy*, February 19, 1997.

Bases for Effluent Limitations

General Basis

17. *Federal Water Pollution Control Act.* Effluent limitations and toxic effluent standards are established pursuant to sections 301 through 305, and 307 of the Federal Water Pollution Control Act, and amendments thereto, which are applicable to the discharges herein.

Applicable Water Quality Objectives

18. The water quality objectives and water quality criteria (WQOs and WQCs) applicable to the receiving water of this discharge are from the Basin Plan, the CTR, and the NTR.

    a. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c., below). The narrative toxicity objective states in part "[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states in part "[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered." Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

    b. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as here, except that where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).

    c. The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving water for this Discharger.

19. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR Part 122.44(d) specifies that water-quality-based effluent limits (WQBELs) may be set based on U.S. EPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative water quality criteria to fully protect designated beneficial uses. The Fact Sheet for this Permit discusses the specific bases and rationales for effluent limits, and is incorporated as part of this Order.

Basin Plan Receiving Water Salinity Policy

20. The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQOs. Freshwater objectives apply to discharges to waters both lying outside the zone of tidal influence and having salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75

percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance [Basin Plan, pp. 4 – 13].

CTR Receiving Water Salinity Policy

21. The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality criteria. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance.

Receiving Water Salinity

22. The receiving waters for the subject discharge are the waters of Central San Francisco Bay. Board staff evaluated RMP salinity data from the three nearest receiving water stations: Richardson Bay, Point Isabel, and Yerba Buena Island, for the period February 1993 – July 2000. During that period, the receiving water's minimum salinity was 11.6 ppt, its maximum salinity was 30.5 ppt, and its average salinity was 23.9 ppt. These data are all well above both the Basin Plan and CTR thresholds for salt water; therefore the limits in this Order are based on salt water criteria.

Technology Based Effluent Limits

23. Permit effluent limits for conventional pollutants are technology-based. Technology-based effluent limitations are put in place to ensure that full secondary treatment is achieved by the wastewater treatment facility. This Order's limits are the same as the previous permit's for the following constituents:

- biochemical oxygen demand (BOD),
- BOD percent removal,
- pH,
- total coliform,
- total suspended solids (TSS),
- TSS percent removal,
- settleable matter,
- oil and grease, and
- total chlorine residual.

Water-quality-based Effluent Limitations

24. The WQBELs regulating toxic substances are derived from water quality criteria listed in the Basin Plan, the NTR, the CTR, the U.S. EPA Gold Book, and/or BPJ. This Order's WQBELs are revised and updated from the previous permit's limits and their presence in this Order is based on the Reasonable Potential Analysis evaluation of the Discharger's data, as described the Reasonable Potential Analysis section, below. Numeric WQBELs are required for all constituents that have reasonable potential to cause or contribute to an excursion above any

water quality standard (that have reasonable potential). Reasonable potential is determined, and final WQBELs are developed, using the methodology outlined in the SIP. If the Discharger demonstrates that meeting the final limits is infeasible, and provides justification for a compliance schedule, then interim limits will be established, with a compliance schedule for achieving the final limits. The attached Fact Sheet contains further details about specific WQBELs, and the Fact Sheet is incorporated as part of this Order.

a. Maximum Daily Effluent Limits (MDEL) are used in this permit to protect against acute water quality effects. It is impracticable to use weekly average limitations to guard against acute effects. Although weekly averages are effective for monitoring the performance of biological wastewater treatment plants, the MDELs are necessary for preventing fish kills or mortality to aquatic organisms.

b. NPDES regulations, the SIP, and U.S. EPA's Technical Support Document (TSD) provide the basis to establish MDELs:

   NPDES regulations at 40 Code of Federal Regulations section 122.45(d) state:

   " For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as:

   (1) Maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works; and

   (2) Average weekly and average monthly discharge limitations for POTWs." (Emphasis added.)

c. The SIP (page 8, Section 1.4) requires water quality based effluent limits be expressed as maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).

d. The TSD (page 96) states a maximum daily maximum limitation is appropriate for two reasons:

   i. The basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards.

   ii. The 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed. A maximum daily limit would be toxicologically protective of potential acute toxicity impacts.

Receiving Water Ambient Background Data used in Calculating WQBELs

25. Ambient background values are used in the Reasonable Potential Analysis (the RPA) and in the calculation of effluent limitations. For the RPA, ambient background concentrations are the observed maximum water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations, or, for criteria/objectives intended to protect human health from carcinogenic

effects, the arithmetic mean of observed ambient water concentrations. The RMP stations at Yerba Buena Island and Richardson Bay, located in the Central Bay, have been sampled for most of the inorganic (CTR constituent numbers 1-15) and some of the organic (CTR constituent numbers 16 – 126) toxic pollutants. Board staff used RMP inorganics data from 1992 through 1998 to calculate the inorganic WQBELs, the RMP organics data from 1993 through 1998 to calculate the organic WQBELs, and the RMP data set from 1992 through 1998 to determine the total recoverable metals ambient background concentrations (depicted in Table 1, below). Not all the constituents listed in the CTR were analyzed by the RMP during these time periods. These data gaps are addressed by the Board's August 6, 2001 letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (the Board's August 6, 2001 letter – available online, see Standard Language And Other References Available Online, below). The Board's August 6, 2001 letter formally requires the Discharger (pursuant to Section 13267 of the California Water Code) to conduct ambient background monitoring and effluent monitoring for those constituents not currently sampled by the RMP and to provide this technical information to the Board. After the required ambient background monitoring is complete, the Board shall use the gathered data to conduct RPAs to determine if additional WQBELs are required.

Table 1. Total Recoverable Metals Ambient Background Concentrations

	Constituent, µg/L									
	Arsenic	**Cadmium**	**Chromium**	**Copper**	**Lead**	**Mercury**	**Nickel**	**Selenium**	**Silver**	**Zinc**
Arithmetic Mean	1.86	0.064	1.44	1.8	0.29	0.003	2.10	0.12	0.01	2.37
Maximum Observed	2.22	0.13	4.4	2.45	0.8	0.006	3.5	0.19	0.07	4.6

Constituents Identified in the 303(d) List

26. On May 12, 1999, the U.S. EPA approved a revised list of impaired water bodies prepared by the State (the 303(d) list), prepared pursuant to provisions of Section 303(d) of the federal Clean Water Act requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Central San Francisco Bay is listed as impaired by:

- chlordane,
- copper,
- DDT,
- diazinon,
- dieldrin,
- dioxin and furan compounds,
- exotic species,
- mercury,
- total PCBs,
- PCBs (dioxin like), and
- selenium.

Dilution and Assimilative Capacity

27. In response to the State Board's Order No.2001-06, Board staff have evaluated the assimilative capacity of the receiving water for 303(d) listed pollutants for which the subject Discharge has reasonable potential. The evaluation included a review of RMP data (Central Bay stations), effluent data, and WQOs. From this evaluation, it is determined that the assimilative capacity is highly variable due to the complex hydrology of the receiving water. Therefore, there is uncertainty associated with the representative nature of the appropriate ambient background data to conclusively quantify the assimilative capacity of the receiving water. Pursuant to Section 1.4.2.1 of the SIP, "dilution credit may be limited or denied on a pollutant-by-pollutant basis..."

    a. For certain bioaccumulative pollutants, based on BPJ, dilution credit is not included in calculating the final WQBELs. The Board placed selenium, mercury, and PCBs on the CWA Section 303(d) list. The U.S. EPA added dioxins and furans compounds, chlordane, dieldrin, and 4,4'-DDT on the CWA Section 303(d) list. Dilution credit is not included for the following pollutants: mercury, dieldrin, 4,4'-DDE, dioxins and furans, PCBs, chlordane, and selenium. The following factors suggest that there is no more assimilative capacity in the Bay for these pollutants.

        i. San Francisco Bay fish tissue data shows that these pollutants, except for selenium, exceed screening levels. The fish tissue data are contained in "Contaminant Concentrations in Fish from San Francisco Bay 1997" May 1997. Denial of dilution credits for these pollutants is further justified by fish advisories to the San Francisco Bay. The Office of Environmental Health and Hazard Assessment (OEHHA) performed a preliminary review of the data from the 1994 San Francisco Bay pilot study, "Contaminated Levels in Fish Tissue from San Francisco Bay." The results of the study showed elevated levels of chemical contaminants in the fish tissues. Based on these results, OEHHA issued an interim consumption advisory covering certain fish species from the bay in December 1994. This interim consumption advice was issued and is still in effect due to health concerns based on exposure to sport fish from the bay contaminated with mercury, PCBs, dioxins, and pesticides (e.g., DDT).

        ii. For selenium, the denial of dilution credits is based on Bay waterfowl tissue data presented in the California Department of Fish and Game's Selenium Verification Study (1986-1990). These data show elevated levels of selenium in the livers of waterfowl that feed on bottom dwelling organisms such as clams. Additionally, in 1987 the Office of Environmental Health Hazard Assessment issued an advisory for the consumption of two species of diving ducks in the north bay found to have high tissue levels of selenium. This advisory is still in effect.

    b. Furthermore, Section 2.1.1 of the SIP states that for bioaccumulative compounds on the 303(d) list, the Board should consider whether mass-loadings should be limited to current levels. The Board finds that mass loading limits are warranted for certain bioaccumulative compounds on the 303(d) list for the receiving waters of this discharge. This is to ensure that this discharge does not contribute further to impairment of the narrative objective for bioaccumulation.

    c. For non-bioaccumulative constituents, it is assumed that there is assimilative capacity based on BPJ, and a conservative allowance of 10:1 dilution is granted, based on SIP Section

1.4.2.1, which allows the Board to further limit dilution credits (see attached Fact Sheet for more information).

Total Maximum Daily Loads (TMDLs) and Waste Load Allocations (WLAs)

28. The Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list in Central San Francisco Bay no later than 2010, with the exception of dioxin and furan compounds. The Board defers development of the TMDLs for dioxin and furan compounds to the U.S. EPA. Future review of the 303(d) list for Central San Francisco Bay may result in revision of the schedules and/or provide schedules for other pollutants.

29. The TMDLs will establish waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, and will result in achieving the water quality standards for the waterbodies. Final effluent WQBELs for 303(d)-listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs.

30. The Board's strategy to collect water quality data and to develop TMDLs is summarized below:

    a. *Data collection* – The Board has given the dischargers the option to collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or water quality objectives. This collective effort may include development of sample concentration techniques for approval by the U.S. EPA. The Board will require dischargers to characterize the pollutant loads from their facilities into the water-quality limited waterbodies. The results will be used in the development of TMDLs, and may be used to update or revise the 303(d) list and/or change the water quality objectives for the impaired waterbodies including Central San Francisco Bay.

    b. *Funding mechanism* – The Board has received, and anticipates continuing to receive, resources from federal and state agencies for TMDL development. To ensure timely development of TMDLs, the Board intends to supplement these resources by allocating development costs among dischargers through the RMP or other appropriate funding mechanisms.

Interim Limits and Compliance Schedules

31. Section 2.1.1 of the SIP states:

    " the compliance schedule provisions for the development and adoption of a TMDL only apply when: ...(b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the RWQCB should consider the discharge's contribution to current loadings and the Discharger's ability to participate in TMDL development."

The discharger agreed to assist the Board in TMDL development through active participation in and contribution to the Bay Area Clean Water Agencies (BACWA). The Board adopted Resolution No. 01-103, on September 19, 2001, authorizing the Executive Officer of the Board to enter into a Memorandum of Understanding with BACWA and other parties to accelerate the development of Water Quality Attainment Strategies, including TMDLs, for the San Francisco Bay-Delta and its tributaries.

32. The SIP and the Basin Plan authorize compliance schedules in a permit if an existing discharger cannot comply immediately with a new and more stringent effluent limitation. Compliance schedules for limits derived from CTR or the NTR WQCs are based on Section 2.2 of the SIP, and compliance schedules for limits derived from Basin Plan WQOs are based on the Basin Plan. Both the SIP and the Basin Plan require the Discharger to demonstrate the infeasibility of achieving immediate compliance with the new limit to qualify for a compliance schedule. The SIP and Basin Plan require the following documentation to be submitted to the Board to support a finding of infeasibility:

- Descriptions of diligent efforts the Discharger has made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts;
- Descriptions of source control and/or pollution minimization efforts currently under way or completed;
- A proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
- A demonstration that the proposed schedule is as short as practicable

For limits based on CTR or NTR criteria (i.e., copper and selenium) this Order establishes a five-year compliance schedule as allowed by the CTR and SIP. For limits based on the Basin Plan numeric objectives (i.e., mercury), this Order establishes a compliance schedule until March 31, 2010. The bases for the limits contained in this Permit are depicted in Table E of the attached Fact Sheet. The Basin Plan provides for a 10-year compliance schedule to implement measures to comply with new standards as of the effective date of those standards. This provision has been construed as authorizing compliance schedules for new interpretations of existing standards (such as the numeric water quality objectives specified in the Basin Plan) resulting in more stringent limits than in the previous permit. Due to the adoption of the SIP, the Board has newly interpreted these objectives. As a result of applying the SIP methodologies, the effluent limitations for some pollutants are more stringent than the prior permit's, and compliance schedules may be appropriate for the new limits for those pollutants. The Board may take appropriate enforcement actions if interim limits and requirements are not met.

33. Until final WQBELs or WLAs are adopted for 303(d)-listed pollutants, state and federal anti-backsliding and antidegradation policies and the SIP, require that the Board include interim effluent limitations for them. The interim effluent limitations will be the lower of the following:

- current performance; or
- the previous permit's limits

In addition to interim concentration limits, this Order establishes interim performance-based mass limitations to maintain the discharge's current mass loadings of mercury, a 303(d)-listed bioaccumulative pollutant which has reasonable potential. This interim performance-based mass limit is based on recent discharge data. This Order does not establish interim mass limits for selenium because of inadequate quantified concentration data. Without adequate quantified data, meaningful performance-based mass limits cannot be calculated for selenium.

34. On May 13, 2002, the Discharger submitted a final feasibility study (the May 13, 2002 Feasibility Study), asserting it is infeasible to immediately comply with the WQBELs calculated according to SIP Section 1.4 for copper, mercury, selenium and silver. Board staff conducted a statistical analysis of recent WWTP performance data with respect to these metals (see attached Fact Sheet). Based on that statistical analysis, the Board concurs with the May 13, 2002 Feasibility Study with regard to copper, mercury, and selenium, and does not concur with it regarding silver.Therefore, this Order establishes compliance schedules for copper, mercury, and selenium that extend beyond one year. The SIP and 40 CFR Part 122.47 require that the Board shall establish interim numeric limitations and interim requirements to control these pollutants. This Order establishes interim limits for these pollutants based on the previous permit limit or WWTP performance, whichever is more stringent, as described in the findings for specific pollutants, below. Specific bases for these interim limits are described in the findings for each pollutant, below. This Order also establishes interim requirements in a provision for development and/or improvement of a Pollution Prevention and Minimization Program to reduce pollutant loadings to the WWTP, and for submittal of annual reports on this Program.

Section 2.2.2 of the SIP establishes a data collection period until May 18, 2003 where available data are insufficient to calculate a final effluent limit (i.e., cyanide). This Order contains a provision requiring the Discharger to conduct studies for collecting ambient background data and for determining site-specific objectives. The discharger is required to participate in an ongoing group effort to implement the studies and submit reports to the Board by 2003. The Board intends to include, in a subsequent permit revision, a final limit based on the required study as an enforceable limit. However, if the Discharger requests and demonstrates that it is infeasible to comply with the revised final limit, the permit revision will establish a maximum five-year compliance schedule.

Since the compliance schedules for CTR criteria and Basin Plan numeric water quality objectives both exceed the length of the permit (4 years and 11 months), the actual final WQBELs for these pollutants will likely be based on either the Site Specific Objective (SSO) or TMDLs/WLAs as described in other findings specific to each of the pollutants.

Antibacksliding and Antidegradation

35. Any interim limits included in this permit comply with anti-degradation and anti-backsliding requirements because they hold the Discharger to current facility performance, and because the final limits comply with anti-backsliding requirements.

Specific Basis

Reasonable Potential Analysis

36. Title 40 CFR Part 122.44(d) (1) (i) requires permits to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard" (have reasonable potential). Using the methods prescribed in Section 1.3 of the SIP, Board staff analyzed the effluent data to determine if the subject discharge has reasonable potential. This is the RPA referenced in Finding 25, above. For all parameters that have reasonable potential, numeric WQBELs are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQCs from the U.S. EPA Gold Book, the NTR, and the CTR.

Reasonable Potential Methodology.

37. The RPA is carried out using the steps contained in Section 1.3 of the SIP. Pursuant to section 1.3 of the SIP, the RPA does not include dilution for any pollutant.

    a. The RPA identifies the observed maximum concentration (MEC) in the effluent for each pollutant, based on effluent concentration data.

    b. There are three triggers in determining reasonable potential:

        i. The first trigger is activated if the MEC is greater than the lowest applicable WQO (i.e. MEC WQO), which has been adjusted for pH and translator data, if appropriate. If the MEC is greater than the adjusted WQO, then there is reasonable potential for that pollutant to cause or contribute to an excursion above the WQO, and a WQBEL is required.

        ii. The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO (i.e. B>WQO), and either:

            1) the MEC is less than the adjusted WQO (i.e. MEC<WQO), or

            2) the pollutant was not detected in any of the effluent samples and all of the detection levels are greater than or equal to the adjusted WQO.

            If B is greater than the adjusted WQO, then a WQBEL is required.

        iii. The third trigger is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even if both MEC and B are less than the WQO. A limit may be required under certain circumstances to protect beneficial uses.

Summary of RPA Data and Results

38. The RPA was based on monthly effluent monitoring data from January 1999 through December 2001. Based on the RPA methodology in the SIP, the following constituents have been found to have reasonable potential:

- copper*,
- lead,
- mercury*,
- nickel,
- selenium*,
- silver,
- zinc,
- cyanide,
- 4,4'-DDE* and
- dieldrin*.

Based on the RPA results, numeric WQBELs are required for these pollutants. Those pollutants marked with an asterisk (*) are included on the current 303(d) list for Central San Francisco Bay.

RPA Determinations.

39. The maximum effluent concentrations (MECs), governing WQOs or WQCs, bases for the WQOs or WQCs, background concentrations used and reasonable potential conclusions from the RPA are depicted in Table 2, below, for the pollutants found to have reasonable potential. The RPA results for most of the constituents in the CTR (Nos. 17-126 except 109 and 111) were indeterminate because of the lack of background data, WQOs, or effluent data. Further details on the RPA procedures and complete RPA results are contained in the attached Fact Sheet.

Table 2. Summary of Reasonable Potential Analysis results.

Constituent[1]		WQO (µg/L)	Basis[2]	MEC, µg/L	Maximum Ambient Background Concentration, µg/L	Reasonable Potential, Trigger
CTR #	Name					
6	Copper*	3.7	CTR	24	2.455	Yes, 1
7	Lead	5.6	BP	5.7	0.804	Yes, 1
8	Mercury*	0.025	BP	0.014	0.006	Yes, 3
9	Nickel	7.1	BP	17	3.5	Yes, 1
10	Selenium*	5	NTR	5	0.39	Yes, 1
11	Silver	2.3	BP	14	0.068	Yes, 1
13	Zinc	58	BP	74	4.6	Yes, 1
14	Cyanide	1	NTR	5	N/A	Yes, 1
109	4,4'-DDE*	0.00059	CTR	No Data	0.00069	Yes, 2
111	Dieldrin*	0.00014	CTR	No Data	0.000264	Yes, 2
	All Others (CTR #s 17 – 126, except those listed above	Various or N/A	CTR, NTR, BP	Non-detect, less than WQO, or no WQO	Less than WQO or N/A	No or [3]

Footnotes for Table 2:

[1] * indicates constituents on 303(d) list.

[2] BP = Basin Plan;
CTR = California Toxics Rule
NTR = National Toxics Rule

[3] Undetermined due to lack of background data, lack of objective, and/or lack of effluent data (See Fact Sheet Table B for full RPA results).

RPA Results for Selected Pollutants

Copper

40. *Water Quality Criteria.* The current 303(d) list includes copper as an impairing pollutant for Central San Francisco Bay. The saltwater criteria for copper in the adopted CTR are 3.1 µg/L for chronic protection and 4.8 µg/L for acute protection. The CTR includes a translator value (0.83) to convert the dissolved criteria to total criteria. This translator was used in developing the WQBELs for copper, and the adjusted WQC is 3.7 µg/L. The discharger may perform a

translator study to determine a more site-specific translator. Section 1.4.1 of the SIP, and the U.S. EPA's June 1996 guidance *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion*, describe this process and provide guidance on establishing a site-specific translator.

41. *Water Effects Ratios*. The CTR provides a mechanism to adjust criteria by deriving site-specific objectives (SSOs) using water-effect ratios (WERs). A WER accounts for differences between a metal's toxicity in laboratory dilution water and its toxicity in water at the site. The U.S. EPA includes WERs to ensure that the metals criteria are appropriate for the chemical conditions under which they are applied, and its February 22, 1994 *Interim Guidance on Determination and Use of Water Effects Ratios for Metals* superseded all prior U.S. EPA guidance on this subject. If the Discharger decides to pursue a copper SSO, it shall be developed in accordance with procedures contained in Section 5.2 of the SIP.

42. *RPA Results* The copper MEC during the period January 1999 – December 2001 was 24 µg/L, which is greater than the adjusted WQO of 3.7 µg/L. Therefore, reasonable potential is affirmed by the first trigger, above, and WQBELs are required.

Lead

43. The governing WQO for lead – 5.6 µg/L – is contained in the Basin Plan. The lead MEC during the period January 1999 – December 2001 was 5.7 µg/L. Therefore, reasonable potential is affirmed by the first trigger, above, and WQBELs are required.

Mercury

44. *Water Quality Criteria.* Both the Basin Plan and CTR include objectives that govern mercury in the receiving water. The Basin Plan specifies objectives of 0.025 µg/L as a 4-day average and 2.1 µg/L as a 1-hour average for the protection of aquatic life. The CTR specifies a long-term average criterion for protection of human health of 0.051 µg/L.

45. *Mercury RPA.* The current 303(d) list includes Central San Francisco Bay as impaired by mercury, due to elevated fish tissue concentrations. None of the quantified mercury detections in the effluent from the period January 1999 – December 2001exceeded the Basin Plan objective of 0.025 µg/L. However, pursuant to Step 7 contained in SIP Section 1.3 and the third trigger, above, Board Staff determined that mass and concentration limits are required for mercury. Elements of the BPJ Board Staff used to make this determination include:

- mercury is a bioaccumulative pollutant and elevated fish tissue concentrations are related to overall mercury mass loading into San Francisco Bay;
- until the mercury TMDL is completed (see Finding 46, below) and mercury WLAs are assigned, all controllable mercury mass loads to Central San Francisco Bay need to be maintained at their current levels;
- an interim performance-based mass limit will maintain the Discharger's contribution to mercury mass loadings into Central San Francisco Bay at their current levels; and
- interim performance-based concentration limits will assist in achieving the interim performance-based mass limit and maintaining mercury mass loadings into Central San Francisco Bay.

46. *Mercury TMDL.* The current 303(d) list includes Central San Francisco Bay as impaired by mercury, due to exceedences in fish tissue levels. Methyl-mercury is a persistent bioaccumulative pollutant. The Board intends to develop a TMDL that will reduce mercury mass loadings to Central San Francisco Bay.

Nickel

47. *Basin Plan Nickel Water Quality Criteria.* The Basin Plan contains nickel WQOs of 140 µg/L an instantaneous maximum and 7.1 µg/L as a 24-hour average values, respectively. During the period January 1999 – December 2001 the nickel MEC was 17 µg/L. Therefore, by the first trigger, above, reasonable potential is affirmed and WQBELs are required for nickel.

48. *Water Effects Ratios.* The CTR provides a mechanism to adjust criteria by deriving site-specific objectives (SSOs) using water-effect ratios (WERs). A WER accounts for differences between a metal's toxicity in laboratory dilution water and its toxicity in water at the site. The U.S. EPA includes WERs to ensure that the metals criteria are appropriate for the chemical conditions under which they are applied, and its February 22, 1994 *Interim Guidance on Determination and Use of Water Effects Ratios for Metals* superseded all prior U.S. EPA guidance on this subject. If the Discharger decides to pursue a nickel SSO, it shall be developed in accordance with procedures contained in Section 5.2 of the SIP.

Selenium

49. The current 303(d) list includes selenium as an impairing pollutant for Central San Francisco Bay. The NTR contains a chronic selenium WQC of 5.0 µg/L. During the period January 1999 – December 2001 there was one quantified detection of selenium at 5 µg/L. Therefore, by the first trigger, above, reasonable potential is affirmed, and WQBELs are required for selenium. Board Staff have determined that a mass-based effluent limitation for selenium cannot be assigned at this time because the effluent data set contains only one quantified value, which cannot be statistically analyzed to calculate a performance-based mass emission limit.

Silver

50. The Basin Plan contains a WQO of 2.3 µg/L for silver. During the period January 1999 – December 2001 the silver MEC was 14 µg/L. Therefore, reasonable potential is affirmed by the first trigger, above, and WQBELs are required.

Zinc

51. The Basin Plan contains zinc WQOs of 170 µg/L and 58 µg/L as instantaneous maximum and 24-hour average values, respectively. During the period January 1999 – December 2001 the zinc MEC was 74 µg/L. Therefore, reasonable potential is affirmed by the first trigger, above, and WQBELs are required.

Cyanide

52. a. The NTR contains a WQC of 1 µg/l for cyanide. This value is below the presently achievable reporting limit (from approximately 3 to 5 µg/l). During the period January 1999 – December 2001, there was one detection of cyanide in the WWTP effluent, quantified at 5 µg/L; the rest of the analyses were nondetected (ND) with a detection limit of 5 µg/L.

b. A regional discharger-funded study is underway for development of a cyanide SSO or recalculation of the criteria. The cyanide study plan was submitted on October 29, 2001. The final report is to be submitted to the Board by June 30, 2003. There is insufficient cyanide background data currently available to calculate a WQBEL. Ambient cyanide data are being collected as required by the August 6, 2001 letter. The WQBELs will be calculated based on additional ambient background information, and/or a cyanide SSO or updated criteria.

c. Cyanide is a regional problem associated with the analytical protocol for cyanide analysis due to matrix interferences. A body of evidence exists to show that cyanide measurements in effluent may be an artifact of the analytical method. This question is being explored in a national research study sponsored by the Water Environment Research Foundation (WERF).

d. Pursuant to Section 2.2.2 of SIP, this Order specifies a data collection period. Until sufficient data is collected, an interim limit is necessary. However, if the Discharger requests, and demonstrates that it is infeasible to comply with the final limit, the permit revision will establish a maximum five-year compliance schedule. In the meantime, an interim limit is established based on the previous permit limit of 25 µg/L.

4,4'-DDE

53. The Discharger has not sampled for 4,4'-DDE in its effluent. However, 4,4'-DDE has been detected in the ambient background at concentrations above the lowest WQO. Therefore, reasonable potential is demonstrated by the second trigger, above, and WQBELs are required for 4,4'-DDE.

54. The current 303(d) list includes Central San Francisco Bay as impaired by DDT, and 4,4'-DDE is chemically linked to the presence of DDT. The Board intends to develop a 4,4'-DDE TMDL leading to overall reduction of 4,4'-DDE mass loading in Central San Francisco Bay. The final 4,4'-DDE WQBELs will be based on the WLAs contained in the 4,4'-DDE TMDL. To assist the Board in developing the TMDL, the Discharger may participate in coordinated efforts (e.g., through BACWA and the RMP) to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limit for 4,4'-DDE, and to present the preferred method for approval by U.S. EPA.

Dieldrin.

55. The Discharger has not sampled for dieldrin in its effluent. However, dieldrin has been detected in the ambient background at concentrations above the lowest WQO. Therefore, reasonable potential is demonstrated by the second trigger, above, and WQBELs are required for dieldrin.

56. The current 303(d) list includes Central San Francisco Bay as impaired by dieldrin. The Board intends to develop a dieldrin TMDL leading to overall reduction of dieldrin loading into Central San Francisco Bay. Final dieldrin WQBELs will be based on the WLAs contained in the dieldrin TMDL. To assist the Board in developing the TMDL, the Discharger may participate in coordinated efforts (e.g., through BACWA and the RMP) to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limit for dieldrin, and to present the preferred method for approval by U.S. EPA.

Other Organics

Phenols

57. The previous permit included a WQBEL for total phenols of 500 µg/L for protection of the narrative toxicity objective. The CTR and NTR specifies criteria for individual phenolic compounds, which are a subset of total phenols. The previous total phenols limit may be more restrictive for several phenolic compounds (e.g., phenol and 2,4-dimethylphenol) than the WQBELs calculated from the SIP owing to their high CTR and NTR criteria. However, for most of the phenolic compounds in the CTR and NTR, the WQBELs would be more restrictive. Retaining WQBELs for both total and individual phenolics would potentially limit and count the same pollutants twice. Despite this, this Order follows the requirements of the CTR, NTR and SIP and the Basin Plan. Concerning the Basin Plan requirement, there is no reasonable potential for exceedance of the narrative toxicity objective due to total phenols. This is based on self-monitoring data from 1999 through 2001, that show the MEC for total phenols was 22 µg/L, which is much less than the Basin Plan discharge limit of 500 µg/L for protecting beneficial uses. Concerning the NTR and SIP, none of the individual phenolic compounds included in the NTR were detected in the effluent and there is no evidence to suggest elevated phenol levels in the discharge. There is currently no background data for specific phenolic compounds. Therefore, based on State Board's Order No. 2001-016 there is no reasonable potential. The Discharger will collect additional phenol compound data as required by the August 6, 2001 letter. The Order can be re-opened to establish limits if new data show there is reasonable potential for any phenolic compounds.

Dioxins and Furans

58. *Numeric Water Quality Objective.* The CTR establishes a numeric human health WQO of 0.000000014 µg/L (equivalent to 0.014 picograms per liter - pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms. The preamble of the CTR states that California should use toxicity equivalents (TEQs) to assess the reasonable potential for dioxin-like compounds to cause or contribute to a violation of a narrative criterion. The preamble further states the U.S. EPA's intent to use the World Health Organization's 1998 Toxicity Equivalence Factor scheme (the WHO TEFs) in the future and encourages California to use the WHO TEFs in State programs. Staff used the WHO TEFs as the TEQs to translate the narrative WQOs for the other 16 congeners into numeric WQOs. Finally, the CTR preamble states the U.S. EPA's intent to adopt revised guidance for water quality criteria subsequent to their health reassessment for dioxin-like compounds.

59. a. The SIP applies to all toxic pollutants, including dioxins and furans. The SIP requires a limit for 2,3,7,8-TCDD if a limit is necessary, and requires monitoring for a minimum of 3 years by all major NPDES Dischargers for the other sixteen dioxin and furan compounds.

b. The Basin Plan contains a narrative WQO for bio-accumulative substances:

"Many pollutants can accumulate on particulates, in sediments, or bio-accumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered."

This narrative WQO applies to dioxin and furan compounds, based in part on scientific consensus that these compounds associate with particulates, accumulate in sediments, and bio-accumulate in the fatty tissue of fish and other organisms.

c. The Board published its report *Contaminant Levels in Fish Tissue from San Francisco Bay, San Francisco Regional Water Quality Control Board* in May 1997.The U.S. EPA's 303(d) listing determined that the narrative objective for bio-accumulative pollutants was not met because of the levels of dioxins and furans in the fish tissue. No data are available to show if there are dioxins and furans present in the discharge at levels above the WQC.

d. The discharger has not monitored for dioxins and furans. Therefore, no effluent data exist to conduct an RPA or calculate interim limits. The Board's August 6, 2001 letter requires the Discharger to monitor for dioxins and furans. Once there is enough information, Board staff will conduct an RPA to determine if limits are required.

Polynuclear Aromatic Hydrocarbons

60. The CTR contains numeric water quality criteria for a number of individual PAHs of 0.049 µg/L. The RPA was conducted on individual PAHs, as required by the SIP and CTR, and not on total PAHs. The CTR specifies criteria for individual PAHs that are a subset of total PAHs. The Basin Plan's total PAHs limit may be more restrictive for several PAHs than the water-quality-based limits calculated from the SIP, owing to their high CTR criteria. However, for most of the PAH compounds in the CTR, the water-quality-based limits would be more restrictive. Retaining limits for both total and individual PAHs would potentially count and impose limits on the same pollutant twice.Despite this Order follows the requirements of the CTR, the SIP, and the Basin Plan. Effluent samples were analyzed for individual PAH compounds 11 times. None of the individual PAHs were detected, and most of the detection limits were above the governing WQOs. Therefore, reasonable potential could not be determined for PAHs. The Board's August 6, 2001 letter requires the Discharger to adequately characterize the effluent for individual PAH constituents with improved detection limits. Upon completion of the required effluent monitoring, the Board will use the gathered data to complete the RPA for all individual PAH constituents listed in the CTR and determine if WQBELs are required.

Organics With Insufficient Data

61. With the exception of individual PAHs, discussed in Finding 60, above, the Discharger has not sampled its effluent for other organic priority pollutants. Therefore, reasonable potential for most of the organic priority pollutants cannot be determined because ambient background concentrations are not available, and/or effluent concentrations are all nondetected with the lowest detection limit being higher than the WQO. The full RPA is depicted in Attached Table 4 of the attached Fact Sheet. The Board's August 6, 2001 letter, described in Finding 25 above, requires the Discharger to monitor for these constituents in the effluent and the receiving water using analytical methods that provide the best feasible detection limits. When sufficient data are available, RPAs will be completed for them to determine whether to add final effluent limitations to the permit for them or to continue monitoring them.

Permit Reopener

62. The Order includes a reopener provision to allow numeric effluent limitations to be added or deleted in the future for any constituent that exhibits or does not exhibit, respectively, reasonable potential. The Board will make this determination based on monitoring results.

Development of Specific Effluent Limitations

Copper

63. *Effluent Limitations.* Statistical analysis of copper data from January 1999 to December 2001 indicate that it is infeasible for the Discharger to immediately comply with the calculated copper WQBELs of 23.6 µg/L daily maximum and 13.0 µg/L monthly average. The statistical analysis is discussed in more detail in the attached Fact Sheet. The SIP requires that interim numeric effluent limits for the pollutant be based on either current treatment facility performance, or on the previous permit's limits, whichever is more stringent. The previous permit contained a copper effluent limitation of 37 µg/Ldaily average, and statistical analysis of recent effluent data indicate the available data are inadequate to calculate an interim performance-based limit (IPBL). Therefore, the interim limit for copper is set at the previous permit's limit of 37 µg/L, taken as a daily average.

64. *Copper TMDL.* The current 303(d) list includes Central San Francisco Bay as impaired by copper. On November 28, 2001, the Board considered a staff report titled *Proposed Revisions to Section 303(d) List and Priorities for Development of Total Maximum Daily Loads (TMDLs) for the San Francisco Bay Region* and authorized the Executive Officer to transmit proposed 303(d) list revisions to the State Board. Copper is proposed for delisting from all segments of the San Francisco Bay Estuary north of the Dumbarton Bridge including Central San Francisco Bay. Alternatively, Site Specific Objectives (SSOs) for copper may be adopted for San Francisco Bay, including Central San Francisco Bay. The discharger is participating in impairment assessment studies aimed at gathering additional data on copper concentrations in Central San Francisco Bay. The Board has considered these studies in its 2001 303(d) listing decision, and will consider them when considering any SSO proposed for copper. The copper WQBELs would be revised consistent with procedures in Section 5.2of the SIP if the impairment studies support adoption of an SSO, or would be revised based on the copper TMDL if it is completed and adopted.

65. *Treatment Plant Performance and Compliance Attainability.* Effluent concentrations during the period January 1999 – December 2001 range from nondetected at 2 µg/L (ND < 2 µg/L) to 24 µg/L (36 samples). The effluent discharged to Central San Francisco Bay has been in consistent compliance with the previous permit limit of 37 µg/L, and is expected to continue in compliance with the interim limit.

Lead

66. *Effluent Limitations.* The lead WQBELs, calculated pursuant to the SIP, are 80 µg/L daily maximum and 40 µg/L monthly average, as depicted in Table 4, below.

67. *Treatment Plant Performance and Compliance Attainability.* During the period January 1999 – December 2001, the lead MEC was 5.7 µg/L, and the WWTP is expected to comply with the WQBELs.

Mercury

68. *Interim Mass-Based Effluent Limitation.* This Order establishes an interim mercury mass-based effluent limitation of 0.018 kilograms per month (Effluent Limitations - Section B.8.a), as depicted in Table 4, below. This mass-based effluent limitation was calculated using the statistical formulas described in the attached Fact Sheet. This mass-based effluent limitation will maintain the WWTP's current mercury loadings to Central San Francisco Bay until the mercury TMDL is adopted, and is consistent with state and federal antidegradation and antibacksliding requirements. The interim mass-based effluent limitation will be revised to be consistent with the WLA assigned in the adopted mercury TMDL.

69. *Concentration-Based Effluent Limitation.* This Order establishes an interim monthly average limit for mercury concentrations based on staff's analysis of the performance of over 25 municipal secondary and advanced-secondary treatment plants in the Bay Area as described in the June 11, 2001 Board staff report titled *Staff Report, Statistical Analysis of Pooled Data from Region-Wide Ultra-clean Mercury Sampling* (the staff report - see Standard Language And Other References Available Online, below). The objective of the analysis was to develop interim performance-based limits (IPBLs) that characterized facility performance regionwide using only ultra-clean data. Compliance with the IPBLs will ensure no further degradation of the receiving water quality due to the discharge. The staff report's conclusions demonstrate that the statistically-based mercury IPBLs are 0.087 µg/L for a secondary plant, and 0.023 µg/L for an advanced secondary plant. The Discharger operates a secondary-level treatment plant, therefore its mercury IPBL is 0.087 µg/L, taken as a monthly average.

70. *Mercury TMDL* . As noted in Finding 29, above, the final mercury WQBELs will be derived from the Discharger's WLA contained in the mercury TMDL, and the permit will be revised to include the final WQBELs as enforceable limitations. While the TMDL is being developed, the Discharger will comply with performance-based mercury mass emission limits to cooperate in maintaining current ambient receiving water conditions. Based on the June 30, 2000 Board staff report titled *Watershed Management of Mercury in the San Francisco Bay Estuary: Total Maximum Daily Load Report to U.S. EPA*, municipal sources are a very small contributor of the mercury load to the Bay. Because of this, it is unlikely that the TMDL will require reduction efforts beyond the source controls required by this permit (see Finding 71, below).

71. *Mercury Control Strategy.* As a prerequisite to being granted the compliance schedule and interim limits described above, the Discharger will need to implement mercury source control strategies. The Board staff intends to require an objective third party to establish baseline programs, and to review program proposals and reports for adequacy.

72. *Treatment Plant Performance and Compliance Attainability.* The effluent monitoring data for mercury from January 1999 through December 2001 show concentrations ranging from ND < 0.200 µg/L to 0.004 µg/L. The effluent discharged to Central San Francisco Bay has been in consistent compliance with the previous permit limits of 1 µg/L and 0.21 µg/L. Ultra-clean sampling and analytical techniques were more consistently employed by the Discharger beginning in December 1999, and effluent mercury concentrations from the period December 1999 to December 2001 range between 0.002 µg/L and 0.012 µg/L. These results indicate that the WWTP would be able to comply with the concentration-based IPBL of 0.087 µg/L. The interim mass-based effluent limitation is based on the 99.87th percentile of recent WWTP performance and, therefore, is expected to be attainable.

Nickel

73. *Effluent Limitations.* The nickel WQBELs, calculated pursuant to the SIP, are 65 µg/L daily maximum and 32 µg/L monthly average (see the attached Fact Sheet for details) , as depicted in Table 4, below.

74. *Treatment Plant Performance and Compliance Attainability.* The nickel MEC reported during the period January 1999 – December 2001 was 17 µg/L, and it is expected that the WWTP can comply with the final WQBELs.

Selenium

75. *Concentration-Based Effluent Limitations.* Statistical analysis of selenium data from January 1999 to December 2001 indicate that it is infeasible for the Discharger to immediately comply with the calculated selenium WQBELs of 5 µg/L daily maximum and 2.5 µg/L monthly average. The statistical analysis is discussed in more detail in the attached Fact Sheet. The SIP requires that interim numeric effluent limits for the pollutant be based on either current treatment facility performance, or on the previous permit's limitation, whichever is more stringent. The previous permit contained a selenium effluent limitation of 50 µg/L daily average, and statistical analysis of recent effluent data indicate the available data are inadequate to calculate a selenium IPBL. Therefore, the interim limit for selenium is set at the previous permit's limit of 50 µg/L, taken as a daily average.

76. *Mass Emission Limit.* The current 303(d) list includes Central San Francisco Bay as impaired by selenium. Board Staff have determined that a mass-based effluent limitation for selenium cannot be assigned at this time because the effluent data set contains a single quantified value, which cannot be statistically analyzed to calculate a performance-based mass emission limit.

77. *Selenium TMDL.* As noted in Finding 29, above, the final selenium WQBELs will be derived from the Discharger's WLA contained in the selenium TMDL, and this Permit will be reopened and revised to include final selenium WQBELs when the selenium TMDL and WLAs are adopted.

78. *Treatment Plant Performance and Compliance Attainability.* Selenium was detected in the effluent once during the period January 1999 – December 2001at 5 µg/L. All other effluent samples collected during that period were ND, with detection limits varying from 1 µg/L to 20 µg/L. Based on these results, it is expected that the WWTP can comply with the interim limit.

79. *Source Control.* Effluent monitoring results since January 2001 have all been ND, with detection limits less than 1 ug/L, except for one ND with a detection limit of 20 µg/L in December 2001. These results are typical of domestic wastewater. If results continue at or below the detection limit of 1 µg/L, then the subject discharge would not have reasonable potential for selenium (under trigger one, above) and source control efforts for selenium would be unnecessary.

Silver

80. *Effluent Limitations for Silver.* The silver WQBELs , calculated pursuant to the SIP, are 11 µg/L monthly average and 22 µg/L daily maximum.

81. *Treatment Plant Performance and Compliance Attainability.* The silver MEC during the period January 1999 – December 2001 was 14 µg/L. Evaluation of the data from the period January 1999 – December 2001 indicates that the final silver limits delineated above are attainable. The data evaluation is discussed in more detail in the attached Fact Sheet.

Zinc

82. *Effluent Limitation.* The zinc WQBELs, calculated pursuant to the SIP, are 910 µg/L and 410 µg/L for daily maximum and monthly average, respectively, as depicted in Table 4, below.

83. *Treatment Plant Performance and Compliance Attainability* The MEC reported during the period January 1999 – December 2001 was 74 µg/L. Comparison of the 74 µg/L MEC to the 412 µg/L monthly average indicates the Discharger can comply with the final WQBELs.

Cyanide

84. *Interim Effluent Limitation.* This Order contains a provision requiring the Discharger, in cooperation with other dischargers in the Bay Area, to conduct a study for cyanide data collection and submit a final report to the Board by May 18, 2003. The Board intends to include, in a subsequent permit revision, final WQBELs for cyanide based on the study. However, if the Discharger requests, and demonstrates that it is infeasible to comply with the final limit, the permit revision will establish a maximum five-year compliance schedule. In the meantime the SIP requires that an interim limit be set, and that the interim limit be the previous permit limit or an interim performance-based limit, whichever is more stringent. Since cyanide was only detected in the WWTP effluent once during the period January 1999 - December 2000, and since it is impossible to perform a statistical analysis of a single data point, this Order establishes an interim cyanide limit of 25 µg/L daily average, based on the previous Permit's limit, as depicted in Table 4, below.

85. *Treatment Plan Performance and Compliance Attainability.* The cyanide MEC was 5 µg/L during the period January 1999 through December 2001. Based on a comparison of the 5 µg/L MEC and the 25 µg/L interim limit, the Discharger can comply with the interim limit.

4,4'-DDE

86. 4,4'-DDE was found to have reasonable potential due to its presence in ambient background samples at levels exceeding water quality objectives. The background data were collected using research-based sample collection, concentration, and analytical methods for 4,4'-DDE. A WQBEL cannot be calculated because the Discharger has not collected any effluent data. The Board's August 6, 2001 letter requires the Discharger to collect data on 4,4'-DDE concentrations in its effluent, and this Permit may be reopened at a later date to establish WQBELs for 4,4'-DDE.

87. *DDT TMDL.* As noted in Finding 29, above, the Board is developing a DDT TMDL that will contain WLAs for DDT. 4,4'-DDE is a breakdown product of DDT and is associated with DDT's presence in aquatic environments. To assist the Board in developing the TMDL, the Discharger may participate in coordinated efforts (e.g., through BACWA and the RMP) to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limit for 4,4'-DDE, and to present the preferred method(s) for approval by U.S. EPA. Upon completion of the DDT TMDL, this Permit may be reopened to revise the 4,4'-DDE WQBELs based on the WLAs contained in the TMDL.

Dieldrin.

88. Dieldrin has been found to have reasonable potential due to its presence in ambient background samples at levels exceeding water quality objectives. The background data were collected using research-based sample collection, concentration, and analytical methods for dieldrin. A WQBEL cannot be calculated because the Discharger has not collected any effluent data. The Board's August 6, 2001 letter requires the Discharger to collect data on dieldrin concentrations in its effluent, and this Permit may be reopened at a later date to establish limits for dieldrin.

89. *Dieldrin TMDL.* As noted in Finding 29, above, the Board is developing a dieldrin TMDL that will contain WLAs for dieldrin. To assist the Board in developing the TMDL, the Discharger may participate in coordinated efforts (e.g., through BACWA and the RMP) to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limit for dieldrin, and to present the preferred method(s) for approval by U.S. EPA. Upon completion of the dieldrin TMDL, this Permit may be reopened to revise the dieldrin WQBELs based on the WLAs contained in the TMDL.

Whole Effluent Acute Toxicity

90. This Order includes effluent limits for whole-effluent acute toxicity. Compliance evaluation is based on 96-hour flow-through bioassays. The U.S. EPA promulgated updated test methods for acute and chronic toxicity bioassays on October 16, 1995 in 40 CFR Part 136 (the 4th Edition). Dischargers have identified several practical and technical issues needing resolution before implementing the 4th Edition procedures. The primary unresolved issue is the use of younger, possibly more sensitive fish, which may require a reevaluation of permit limits. The State Board staff recommended to the Regional Boards that holders of new or renewed permits be allowed a time period during which laboratories can become proficient in conducting the new tests. Provision 6, below, grants the Discharger 12 months from the effective date of this Permit to implement the new test methods. In the interim, the Discharger is required to continue using the current test protocols.

Whole Effluent Chronic Toxicity

91. a. Program History. The Basin Plan contains a narrative toxicity objective stating that "All waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses to aquatic organisms" and that "there shall be no chronic toxicity in ambient waters." In 1986, the Board initiated the Effluent Toxicity Characterization Program (ETCP), with the goal of developing and implementing toxicity limits for each discharger based on actual characteristics of both receiving waters and waste streams. Dischargers were required to monitor their effluent using critical life stage toxicity tests to generate information on toxicity test species sensitivity and effluent variability to allow development of appropriate chronic toxicity effluent limitations. Two rounds of effluent characterization were conducted by selected dischargers beginning in 1988 and in 1991. A second round was completed in 1995. Board guidelines for conducting toxicity tests and analyzing results were published in 1988 and last updated in 1991.

The Board adopted Order No. 92-104 in August 1992 amending the permits of eight dischargers to include numeric chronic toxicity limits. However, due to the court decision which invalidated the California Enclosed Bays and Estuaries Plan and Inland Surface Waters Plan, on which Order No. 92-104 was based, the State Board stated, by letter dated November 8, 1993, that the Board will have to reconsider Order no. 92-104. This letter also committed to

providing the regional boards with guidance on issuing permits in the absence of the State Plans (*Guidance for NPDES Permit Issuance,* February 1994).

b. *State Board Toxicity Task Force Recommendations.* The State Board Toxicity Task Force provided several consensus-based recommendations for consideration in redrafting the State Plans in their October 1995 report to the State Board. A key recommendation was that permits should include narrative rather than numeric limits. The numeric test values should then be used as toxicity "triggers" to first accelerate monitoring and then initiate Toxicity Reduction Evaluations (TREs).

c. *Regional Board Program Update.* The Board intends to reconsider Order No. 92-104 as directed by the State Board, and to update, as appropriate, the Board's Whole Effluent Toxicity (chronic and acute) program guidance and requirements. This will be done based on analysis of dischargers' routine monitoring and ETCP results, and in accordance with current U.S. EPA and State Board guidance. In the interim, decisions regarding the need for and scope of chronic toxicity requirements for individual dischargers will need to be consistent with the SIP.

d. *Permit Requirements.* In accordance with the SIP, U.S. EPA and State Board Task Force guidance, and based on BPJ, this Permit includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective. This Permit includes the Basin Plan narrative toxicity objective as the applicable effluent limit, implemented via monitoring with numeric values as "triggers" to initiate accelerated monitoring and to initiate a chronic TRE as necessary.

e. *Permit Reopener.* The Board will consider amending this Permit to include numeric toxicity limits if the Discharger fails to aggressively implement all reasonable control measures included in its approved TRE workplan, following detection of consistent significant non-artifactual toxicity.

Coliform Limits

92. This order includes the Basin Plan's effluent limitations for Total Coliform [Basin Plan Table 4-2, pg. 4 - 69]:

- The moving median value for the Most Probable Number (MPN) of total coliform bacteria in any five (5) consecutive samples shall not exceed 240 MPN/100 ml; and

- Any single sample shall not exceed 10,000 MPN/100 ml.

Pollution Prevention

93. Some constituents listed in the CTR have never been monitored or have not been detected at levels greater than analytical detection limits used. However, these detection limits are numerically greater than applicable WQOs. As a result, the RPA cannot be completed for those constituents. The discharger should work with its laboratory to lower detection limits to be at or below the applicable WQOs or WQCs. If the Discharger, using the new or improved methods, finds pollutants present at levels above the new detection limits but below the former analytical quantification limits established, and it is determined the pollutants have reasonable potential, then in the absence of effluent limits, the Discharger shall implement a Pollutant Minimization Plan to achieve the water quality standards. Provision 5 of this Order requires the

Discharger to submit and implement a Pollutant Minimization Plan for these pollutants, if appropriate.

Monitoring Requirements (Self-Monitoring Program)

94. The Self-Monitoring Program (SMP) includes monitoring at the outfall for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. Influent monitoring is also required for selected parameters to assess WWTP performance. For the most part, the monitoring is the same as required by the previous permit. The Board generally requires monitoring for influent and effluent BOD and TSS three to five (3 – 5) times per week for a major sanitary treatment facility such as the Discharger. Monthly metals, mercury, and cyanide monitoring are consistent with the previous order. Dioxin and furan monitoring are required because these pollutants are listed as causing impairment to Central San Francisco Bay and are required samplings in Section 3 of SIP [Page 27-28]. Finally, previous monitoring for toxic organic pollutants is replaced by more comprehensive monitoring as required by the Board's August 6, 2001 Letter.

Special Studies

Required Studies

Dioxin Study

95. The SIP states that each Regional Board shall require major and minor POTWs and industrial Dischargers in its region to conduct effluent monitoring for 2,3,7,8-TCDD congeners listed in the Board's August 6, 2001 letter, regardless of whether an effluent limit is required for 2,3,7,8-TCDD. The monitoring shall be consistent with the Board's August 6, 2001 letter. The monitoring is intended to assess the presence and amounts of the congeners being discharged to inland surface waters, enclosed bays, and estuaries. The Board will use these monitoring data to establish strategies for a future approach to controlling these compounds across different environmental media.

Effluent Characterization for Selected Constituents

96. Board staff's review of effluent monitoring data from January 1999 through December 2001 determined there were insufficient monitoring data to evaluate reasonable potential for some pollutants listed in the SIP. Therefore, this Order requires additional monitoring for effluent characterization, pursuant to the requirements of Provision 3, below and the Board's August 6, 2001 letter.

Ambient Background Concentration Determination

97. Board staff's review of the ambient background concentrations found that there were insufficient receiving water data to determine reasonable potential and calculate numeric WQBELs for some pollutants listed in the SIP. Therefore, this Order requires additional monitoring of ambient background concentrations pursuant to the requirements of Provision 4, below and the Board's August 6, 2001 letter.

Optional Studies

Optional Mass Offset.

98. This Order contains requirements to prevent further degradation of the impaired waterbody. Such requirements include the adoption of interim mass limits that are based on WWTP performance, provisions for aggressive source control and waste minimization, feasibility studies for wastewater reclamation, and WWTP optimization. After implementing these efforts, the Discharger may find that further net reductions of the total mass loadings of the 303(d)-listed pollutants to the receiving water can only be achieved through a mass offset program. Provisions of this Order relate to an optional mass offset program.

Copper Translator Study.

99. The Basin Plan does not establish a saltwater WQO for copper. Therefore, the CTR WQC for copper, 3.1 µg/L dissolved, is the applicable standard. Since NPDES permit limits must be expressed as a total recoverable metal value, a translator is required to convert the dissolved objective into a total recoverable objective. Per Appendix 3 of the SIP, the default translator used in this permit is 0.83, which converts the 3.1 µg/L dissolved to 3.7 µg/L total. An optional copper translator study is included in Provision 11 this permit to encourage the Discharger to develop a local translator value for copper in place of the default translator value of 0.83 established in the SIP. The discharger may use local RMP station data in the development of the translator.

Future Service Area Expansion

100. Currently there are three areas within the Discharger's sphere of influence that do not discharge to the WWTP and which might need to discharge to it in the future. These areas are:

- a group of about 30 homes currently served by the Paradise Cove Satellite Treatment Plant;
- a group of homes in the Seafirth area currently served by a treatment plant owned by the Seafirth homeowner's association;
- other existing and planned homes in outlying areas near Sanitary District No. 5, Paradise Cove or Seafirth.

Any impacts to the subject discharge caused by these expansions will be addressed either during the next permit reissuance in 2007 or by reopening this Permit, as appropriate.

Other Discharge Characteristics and Permit Conditions

O & M Manual

101. The Discharger maintains an Operations and Maintenance Manual to provide WWTP and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. In order to remain a useful and relevant document, the manual shall be kept updated to reflect significant changes in treatment facility equipment and operation practices.

NPDES Permit and CEQA

102. This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (California Environmental Quality Act - CEQA) pursuant to Section 13389 of the California Water Code.

Notification

103. The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations. Board staff prepared a Response to Comments, which are hereby incorporated by reference as part of this Order.

Public Hearing

104. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code, regulations , and plans and policies adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that Sanitary District No. 5 (the Discharger) shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.

2. Discharge of wastewater at any point where it does not receive an initial dilution of at least 10:1 is prohibited.

3. The bypass or overflow of untreated or partially treated wastewater to waters of the State, either at the WWTP or from the collection system or pump stations tributary to the WWTP, is prohibited except as provided for under the conditions stated in 40 CFR Part 122.41 (m)(4) and in Standard Provision A.13. Bypassing of individual treatment processes - for example, during periods of high wet weather flow - is allowable provided that the combined discharge of fully treated and partially treated wastewater complies with the effluent and receiving water limitations in this Order.

4. The discharge of average dry weather flows greater than 0.98 MGD is prohibited. The average dry weather flow shall be determined over three consecutive dry weather months each year.

5. Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by an NPDES permit, to a storm drain system or waters of the State are prohibited.

B. EFFLUENT LIMITATIONS

Conventional Pollutants

1. The following effluent limitations apply to effluent discharged to Central San Francisco Bay through the discharge outfall (Sampling Station E-001 as defined in the Self-Monitoring

Program). Chlorine residual shall be monitored at Sampling Station E-001-S and reported by the Discharger.

a. The effluent shall not exceed the following limits:

Table 3. Effluent limitations for conventional constituents.

Constituent	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
i Biochemical Oxygen Demand (BOD)	mg/L	30	45		
ii. Total Suspended Solids (TSS)	mg/L	30	45		
iii. Oil & Grease	mg/L	10		20	
iv. Settleable Matter	ml/L-hr	0.1		0.2	
v. Total Chlorine Residual[A]	mg/L				0.0

Footnote for Table 3

A. Requirement defined as below the limit of detection in standard test methods defined in the latest U.S. EPA approved edition of *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite dosage (including a safety factor) and concentration to prove that chlorine residual exceedences are false positives. If convincing evidence is provided, Board staff will conclude that these false positive chlorine residual exceedences are not violations of this permit limit.

2. pH: The pH of the effluent shall not exceed 9.0 nor be less than 6.0.The Discharger shall be in compliance with the pH limitation specified herein, provided that all of the following conditions are satisfied:

   a. pH is monitored continuously;

   b. The total time during which the pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month; and

   c. No individual excursion from the required range of pH values shall exceed 60 minutes.

3. 85 Percent Removal, BOD and TSS

   The arithmetic mean of the biochemical oxygen demand (BOD_5 20°C) and Total Suspended Solids (TSS) values, for effluent samples collected in each calendar month shall not exceed 15 percent of the arithmetic mean of the respective values for influent samples collected at approximately the same times during the same period.

4. Total Coliform Bacteria

   The treated wastewater, at some point in the treatment process prior to discharge, shall meet the following limits of bacteriological quality:

   a. The moving median value for the Most Probable Number (MPN) of total coliform bacteria in five (5) consecutive samples shall not exceed 240 MPN/100 ml; and,

   b. Any single sample shall not exceed 10,000 MPN/100 ml

The discharger may use alternate fecal coliform limits of bacteriological quality instead of meeting 4.a. and 4.b. above (total coliform limits) provided that it can be conclusively demonstrated to the satisfaction of the Board that such a substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.

Toxic Pollutants

Whole Effluent Acute Toxicity

5. Representative samples of the effluent shall meet the following limits for acute toxicity. Compliance with these limits shall be achieved in accordance with Provision 6 of this Order.

   a. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be:

      i. an 11-sample median value of not less than 90 percent survival, as defined in subsection b.i., below, and

      ii. an 11-sample 90th percentile value of not less than 70 percent survival as defined in subsection b.ii., below.

   b. These acute toxicity limits are further defined as follows:

      i. 11-sample median limit:

      Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.

      ii. 90th percentile limit:

      Any bioassay test showing survival of 70 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or fewer bioassay tests also showed less than 70 percent survival.

      iii. Ammonia:

      If the Discharger demonstrates to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge is not adversely impacting receiving water quality or beneficial uses, then such toxicity does not constitute a violation of this effluent limit.

Whole Effluent Chronic Toxicity

6. Representative samples of the treated final effluent shall meet the following requirements for chronic toxicity. Compliance with the Basin Plan narrative chronic toxicity objective shall be demonstrated in accordance with Provision 7 of this Order and shall be demonstrated according to the following tiered requirements based on those treated final effluent samples meeting test acceptability criteria:

   a. Routine monitoring;

b. Accelerated monitoring after exceeding either of the following two triggers:

i. a three sample median value of 10 chronic toxicity (TU),or

ii. a single sample maximum of 20 TU or greater.

Compliance shall be determined as described in Provision 7, below. Accelerated monitoring shall consist of monitoring again during the same climate season (wet or dry) as the original test exceeding either trigger above;

c. Return to routine monitoring if accelerated monitoring does not exceed either trigger in subsection b., above;

d. Initiate approved Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) work plan if accelerated monitoring confirms consistent toxicity above either trigger in subsection 6.b, above. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge. Failure to conduct the required toxicity tests or a TRE within a designated period shall result in establishment of effluent limitations for chronic toxicity.

e. Return to routine monitoring after appropriate elements of TRE work plan are implemented and either the toxicity drops below both triggers in subsection 6.b, above , or the Executive Officer authorizes a return to routine monitoring, based on the results of the TRE.

Toxic Substances

7. The effluent shall not exceed the following limits:

Table 4. Toxic Substances

Constituent		Daily Maximum, µg/L	Monthly Average, µg/L	Interim Daily Average, µg/L	Interim Monthly Average, µg/L	Interim Mass Emission Limit, kg/mo	Notes
CTR No.	Name						
6	Copper			37		- -	1, 5
7	Lead	80	40			- -	1
8	Mercury				0.087	0.018	1, 2
9	Nickel	65	32			- -	1
10	Selenium			50		- -	1, 5
11	Silver	22	11			- -	1
13	Zinc	910	410			- -	1
14	Cyanide			25		- -	1, 3, 4

Footnotes to Table 4:

1. a. Compliance with these limits is intended to be achieved through secondary treatment and, as necessary, pretreatment and source control.

   b. All analyses shall be performed using current U.S. EPA methods, or equivalent methods approved in writing by the Executive Officer. The Discharger is in violation of the limit if the discharge concentration exceeds the effluent limitation and the reported minimum level (ML) for the analysis for that constituent.

   c. Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).

   d. Limits have been rounded to two significant figures to be consistent with guidance for final WQC values, as noted in the CTR (*General Note 3 to Table in Paragraph (b)(1)*, as shown on Federal Register pg. 31717, Vol. 65, No. 97, May 18, 2000).

2. Mercury: Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques, with a method detection limit of 0.002 µg/L. The interim limit for mercury shall remain in effect until March 3, 2010, or until the Board amends the limit based on a waste load allocation in the mercury TMDL. However, during the next permit reissuance, Board staff may reevaluate the interim mercury limit.

3. Cyanide: Compliance may be demonstrated by measurement of weak acid dissociable cyanide.

4. This interim limit shall remain in effect until May 18, 2003, or until the Board amends the limit based on additional background data and/or updated WQOs for cyanide. However, during the next permit revision, Board staff may re-evaluate the interim limits.

5. This interim limit shall remain in effect until November 30, 2007, or until the Board amends the limit based on additional data, site-specific objectives, or the Waste Load Allocation in the TMDL. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.

8. Interim Mass Emission Limit for Mercury

Until the mercury TMDL and Waste Load Allocation are adopted, the Discharger shall demonstrate that the total mercury mass loading from its discharges to Central San Francisco Bay has not increased by complying with the following conditions:

a. The total mercury mass load shall not exceed the mercury mass emission limit of 0.018 kilograms per month (kg/month), as computed in b, below.

b. Compliance with this limit shall be evaluated using monthly moving averages of total mass load, computed as described below:

$$12-Month\ Moving\ Average, kg/month = \frac{\sum (Last\ 12\ months'\ Monthly\ Total\ Mass\ Loads, kg/month)}{12}$$

where

$$Monthly\ Total\ Mass\ Load, kg/month = Q * C * 0.1151$$

where

Q = monthly average WWTP effluent flow, MGD, as reported

C = effluent concentration, µg/L, corresponding to each month's flow.

If more than one concentration measurement is obtained in a calendar month, the average of these measurements is used as the monthly concentration value for that month. If test results are less than the method detection limit used, the concentration value shall be assumed to be equal to the method detection limit.

0.1151 = unit conversion factor to obtain kg/month using monthly average flow in MGD and concentration in µg/L.

c. The discharger shall submit a cumulative total of mass loadings for the previous 12 months with each monthly Self-Monitoring Report. Compliance each month will be determined based on the 12-month moving averages over the previous 12 months of monitoring. The discharger may use monitoring data collected under accelerated schedules (i.e., special studies) to determine compliance.

d. The mercury TMDL and WLAs will supersede this mass emission limitation upon their completion. The Clean Water Act's antibacksliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following completion of the TMDL and WLA, if the requirements for an exception to the rule are met.

C. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Floating, suspended, or deposited macroscopic particulate matter or foam;

   b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

   c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

   d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and

   e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

2. The discharge of waste shall not cause the following limits to be exceeded in waters of the State at any one place within 1 foot of the water surface:

   a. Dissolved Oxygen: 5.0 mg/L, minimum

      The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

b. Dissolved Sulfide: 0.1 mg/L, maximum

c. pH: Variation from normal ambient pH by more than 0.5 pH units.

d. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and

0.16 mg/L as N, maximum.

e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

D. SLUDGE MANAGEMENT PRACTICES

1. All sludge generated by the Discharger must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge-only landfill. This disposal practice is regulated by the U.S. EPA under the 40 CFR 503 regulations (Standards for the Use or Disposal of Sewage Sludge; February 19, 1993 final rule). All the requirements in 40 CFR 503 are enforceable by U.S. EPA whether or not they are stated in an NPDES permit or other permit issued to the Discharger.

2. The discharger is required to submit an annual report to the U.S. EPA regarding its sewage sludge disposal practices in accordance with the requirements of 40 CFR 503. The discharger shall include a summary of this information in the Self Monitoring Program Annual Report submitted to the Board.

3. Sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.

4. The treatment and temporary storage of sewage sludge at the Discharger's wastewater treatment facility shall not cause waste material to be in a position where it will be carried from the sludge treatment and storage site and deposited in the waters of the State.

5. Permanent on-site storage or disposal of sewage sludge at the Discharger's wastewater treatment facility is not authorized by this permit. A report of Waste Discharge shall be filed and the site brought into compliance with all applicable regulations prior to commencement of any such activity by the Discharger.

6. The Board may amend this permit prior to expiration if changes occur in applicable state and federal sludge regulations.

E. PROVISIONS

Permit Compliance and Rescission of Previous Waste Discharge Requirements

1. The Discharger shall comply with all sections of this Order beginning on December 1,2002. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 95-187. Order No. 95-187 is hereby rescinded upon the effective date of this Order.

Special Studies

Cyanide Study and Schedule – Site-Specific Objective Study for Cyanide

2. The Discharger shall participate in a regional discharger-funded effort to conduct a study for cyanide data collection and development of site-specific objective. The cyanide study plan was submitted on October 29, 2001. The Board intends to include, in a subsequent permit revision, an enforceable final cyanide limit based on the study.

    a. Upon approval by the Executive Officer, the Discharger shall participate in the implementation of the cyanide study. Annual reports shall be submitted by January 31 of each year documenting the progress of the ambient background characterization, and site-specific objective studies. Annual reports shall summarize the findings and progress to date, and include a realistic assessment of the shortest practicable time required to perform the remaining tasks of the studies.

    b. By May 18, 2003, the Discharger, in co-operation with other Dischargers, shall complete the ambient background water quality characterization study for cyanide, and submit a report of the results.

    c. By June 30, 2003, the Discharger, in co-operation with other Dischargers, shall submit a final report of completion for the site-specific objective. This study shall be adequate to allow the Board to initiate the development and adoption of the site-specific objective for cyanide. This permit may be reopened to include a revised final limit based on the site-specific objective developed.

Effluent Characterization for Selected Constituents

3. The Discharger shall monitor and evaluate the discharged effluent for the constituents listed in Enclosure A of the Board's August 6, 2001 letter. Compliance with this requirement shall be achieved in accordance with the specifications stated in the Board's August 6, 2001 letter under Effluent Monitoring for major Dischargers. Interim and final reports shall be submitted to the Board in accordance with the schedule specified below (same schedule as specified in the Board's August 6, 2001 Letter):

    a. The effluent monitoring shall be conducted according to the Discharger's effluent characterization study sampling plan, as conditionally approved by the Executive Officer, on December 20, 2001, including any amendments required for approval.

    b. The Discharger shall submit technical reports acceptable to the Executive Officer documenting status and results of the study in accordance with the following:

Interim Report:	Submit report no later than:	May 18, 2003.
Final Report:	Submit report no later than:	April 30, 2007.

Ambient Background Receiving Water Study

4. The Discharger shall collect or participate in collecting background ambient receiving water data with other Dischargers and/or through the RMP. This information is required to perform RPAs and to calculate effluent limitation. On September 28, 2001, the Discharger, as a participating member of BACWA, submitted an ambient background receiving water study plan to the Executive Officer for approval. The Executive Officer conditionally approved this plan in November 2001. The Discharger shall submit technical reports acceptable to the Executive Officer documenting status and results of the study in accordance with the following:

Interim Report	May 18, 2003
Final Report	April 30, 2007

Submittal and Implementation of Pollutant Minimization and Pollution Prevention Plans.

5. Section 2.4.5.1 of the SIP requires submittal and implelmentation of a pollutant minimization plan (PMP). The goal of the PMP shall be to reduce all potential sources of priority pollutant(s) through pollutant minimization (control) strategies to maintain the effluent concentration at or below water quality objectives. As stated in Finding 93, for constituents detected above the new detection limits but below the formerly established analytical quantification limits, and which have reasonable potential, and in the absence of effluent limits, the Discharger shall implement a PMP to achieve the water quality objectives. The PMP shall include, but is not limited to, the following actions and submittals:

	Tasks	Compliance Date
a.	Pollutant Minimization Plan	after reasonable potential is confirmed by the Executive Officer and the Discharger is notified by the Executive Officer, within 6 months, the Discharger shall submit a PMP.

The PMP shall include, but is not limited to:

i. An annual review and semi-annual monitoring of potential sources of reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measure approved by the Executive Officer if it is demonstrated source monitoring is unlikely to produce useful analytical data;

ii. Quarterly monitoring for the priority pollutant(s) in the influent to the wastewater treatment system, or alternative measures approved by the Executive Officer if it is demonstrated influent monitoring is unlikely to produce useful analytical data;

iii. Control strategy design to proceed toward the goal of maintaining concentrations of the priority pollutant(s) in the effluent at or below the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the priority pollutant(s), consistent with the control strategy.

b. Implementation of PMP — 30 days after approval of the PMP by the Executive Officer

The Discharger shall implement the approved PMP in order to reduce the priority pollutants to the WWTP, and subsequently, to receiving waters.

c. Quarterly Monitoring — 90 days after implementation of the PMP, and quarterly thereafter

The discharger will conduct quarterly monitoring for the priority pollutants in the influent to the WWTP, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data

d. Annual Report — 365 days after implementation of the PMP, and annually thereafter

The discharger shall submit an Annual Status Report, acceptable to the Executive Officer. The report should include at least the following information:

i. All PMP monitoring results of the previous year;

ii. A list of potential sources for the priority pollutants;

iii. A summary of all actions undertaken pursuant to the control strategy; and

iv. A description of actions to be taken the following year.

6. The Discharger shall implement the source identification and pollution prevention measures for copper, mercury, and selenium outlined in the May 18, 2002 Feasibility Study and as approved by the Executive Officer.

Toxicity Requirements

Acute Toxicity

7. Compliance with acute toxicity requirements of this Order shall be achieved in accordance with the following:

a. From permit effective date to **November 30, 2003**:

i. Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays.

ii. Test organisms shall be fathead minnows or three-spined sticklebacks unless specified otherwise in writing by the Executive Officer.

iii. All bioassays shall be performed according to the Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms, 3rd

Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

b. From **December 1, 2003** onward:

i. Compliance with the acute toxicity effluent limits of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays, or static renewal bioassays. If the Discharger will use static renewal tests, or continue to use 3rd Edition Methods, they must submit a technical report by July 30, 2003, identifying the reasons why flow-through bioassay is not feasible using the approved EPA protocol (4th edition).

ii. Test organisms shall be fathead minnows unless specified otherwise in writing by the Executive Officer.

iii. All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms,"4th Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

Whole Effluent Chronic Toxicity Requirements

8. Definition: Compliance with the Basin Plan narrative chronic toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated final effluent meeting test acceptability criteria:

a. routine monitoring; and

b. accelerated monitoring after exceeding a three sample median value of 10 chronic toxicity units (TU_c)[1] or a single sample maximum of 20 TU_c or greater. Accelerated monitoring shall consist of monitoring at frequency intervals of one half the interval given for routine monitoring in the SMP of this Order;

c. return to routine monitoring if accelerated monitoring does not exceed either trigger in "b", above;

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[1] A TU_c equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC, EC, or NOEC values (e.g., (e.g., If NOEL = 100, then toxicity = 1 TU_c). (The terms IC, EC, NOEL and NOEC and are defined in Attachment A of the Self Monitoring Program, incorporated as part of this Order). Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge. Failure to conduct the required toxicity tests or a TRE within a designated period shall result in the establishment of effluent limitations for chronic toxicity.

d. initiate approved toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) work plan if accelerated monitoring confirms consistent toxicity above either trigger in "b", above, in accordance with the conditions below:

i. The Discharger shall prepare and submit to the Board for Executive Officer approval a TRE work plan. An initial generic workplan shall be submitted within 120 days of the date of adoption of this Order. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities.

ii. The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.

iii. The TRE shall be conducted in accordance with an approved work plan.

iv. The TRE needs to be specific to the discharge and Discharger facility, and be in accordance with current technical guidance and reference materials including U.S. EPA guidance materials. TRE shall be conducted as a tiered evaluation process, such as summarized below:

1) Tier 1 consists of basic data collection (routine and accelerated monitoring).

2) Tier 2 consists of evaluation of optimization of the treatment process including operation practices, and in-plant process chemicals.

3) Tier 3 consists of a toxicity identification evaluation (TIE).

4) Tier 4 consists of evaluation of options for additional effluent treatment processes.

5) Tier 5 consists of evaluation of options for modifications of in-plant treatment processes.

6) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.

v. The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.

vi. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies shall be employed.

vii. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.

viii. Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.

ix. The Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

e. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in Attachment A of the SMP. The Discharger shall comply with these requirements as applicable to the discharge.

f. Return to routine monitoring after appropriate elements of TRE work plan are implemented and either the toxicity drops below either trigger level in "b", above or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.

Wet Weather Flow Management

9. Facility Operations during Wet Weather Conditions

   a. The Discharger shall maintain and operate the collection system in a manner to optimize control and conveyance of wastewater flows to the WWTP facility.

   b. The Discharger shall maintain and operate the WWTP facility in a manner to optimize treatment performance and ensure that discharges comply with secondary treatment limits at all times.

   c. In order to provide adequate overall reliability of the treatment process, especially during wet weather conditions, the Discharger shall at all times provide emergency stand-by power for all treatment units necessary to provide full secondary treatment, including disinfection processes.

Ongoing Programs

Regional Monitoring Program

10. The Discharger has committed to continue participating in the Regional Monitoring Program (RMP) for trace substances in San Francisco Bay in lieu of more extensive effluent and receiving water self-monitoring requirements that may be imposed.

Optional Studies

Optional Mass Offset

11. The discharger may submit to the Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Board may modify this Order to allow an approved mass offset program.

Copper and Nickel Translator Study and Schedule

12. In order to develop information that may be used to establish water-quality-based effluent limits based on dissolved criteria for copper and nickel, the Discharger may utilize RMP data from

stations nearest the Discharger's outfall. Copper and nickel translators will be calculated as part of the technical work being conducted for the North of Dumbarton copper/nickel TMDL/SSO project. Optionally, the Discharger may implement a sampling plan to collect data for development of dissolved-to-total translators for copper and nickel. If the Discharger chooses to proceed with the study, which may be conducted in cooperation with other Dischargers, the work shall be performed in accordance with the following tasks:

a. Copper and Nickel Translator Study Plan. If submitted, the study plan shall be acceptable to the Executive Officer and shall outline data collection for establishment of dissolved-to-total copper and nickel translators, as discussed in the Findings.

b. After Executive Officer approval, the study plan may be implemented. If submitted, the study plan shall provide for development of translators in accordance with the State Board's SIP, EPA guidelines, California Department of Fish and Game approval, and any relevant portions of the Basin Plan, as amended.

c. Copper and Nickel Translator Final Report: If the Discharger conducts a translator study, it will use field sampling data approximate to the discharge point and in the vicinity of the discharge point, or as otherwise provided for in the approved workplan, and will submit a final report, acceptable to the Executive Officer, no later than November 30, 2004, documenting the results of the copper and nickel translator study. The study may be conducted in coordination with other Dischargers and may also include any other site specific information that the Discharger would like the Board to consider in development of a water-quality-based effluent limitation for copper and nickel.

Facilities Status Reports and Permit Administration

13. Wastewater Facilities, Review and Evaluation, and Status Reports

a. The discharger shall operate and maintain its wastewater collection, treatment and disposal facilities in a manner to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary, in order to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

b. The discharger shall regularly review and evaluate its wastewater facilities and operation practices in accordance with section a. above. Reviews and evaluations shall be conducted as an ongoing component of the Discharger's administration of its wastewater facilities.

c. Annually, the Discharger shall submit to the Board a report describing the current status of its wastewater facility review and evaluation, including any recommended or planned actions and an estimated time schedule for these actions. This report shall include a description or summary of review and evaluation procedures, and applicable wastewater facility programs or capital improvement projects. This report shall be submitted in accordance with the Annual Status Report Provision below.

14. Operations and Maintenance Manual, Review and Status Reports

a. The discharger shall maintain an Operations and Maintenance Manual (O & M Manual) as described in the findings of this Order for the Discharger's wastewater facilities. The O & M

Manual shall be maintained in useable condition, and available for reference and use by all applicable personnel.

b. The discharger shall regularly review, and revise or update as necessary, the O & M Manual(s) in order for the document(s) to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in treatment facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

c. Annually, the Discharger shall submit to the Board a report describing the current status of its O & M Manual review and updating. This report shall include an estimated time schedule for completion of any revisions determined necessary, a description of any completed revisions, or a statement that no revisions are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

15. Contingency Plan, Review and Status Reports

a. The discharger shall maintain a Contingency Plan as required by Board Resolution 74-10 (available online - see Standard Language And Other References Available Online, below), and as prudent in accordance with current municipal facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.

b. The discharger shall regularly review, and update as necessary, the Contingency Plan in order for the plan to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.

c. Annually, the Discharger shall submit to the Board a report describing the current status of its Contingency Plan review and update. This report shall include a description or copy of any completed revisions, or a statement that no changes are needed. This report shall be submitted in accordance with the Annual Status Report Provision below.

Annual Status Reports

16. The annual reports identified in Provisions 12c, 13.c, and 14.c, above, shall be submitted to the Board by June 30 of each year. Modification of report submittal dates may be authorized, in writing, by the Executive Officer.

303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review

17. The Discharger shall participate in the development of a TMDL or site-specific objective for copper, mercury, selenium, 4,4'-DDE, and dieldrin. By January 31 of each year, the Discharger shall submit an update to the Board to document its participation efforts toward development of the TMDL(s) or site-specific objective(s). Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.

New Water Quality Objectives

18. As new or revised water quality objectives come into effect for the Bay and contiguous water bodies (whether statewide, regional or site-specific), effluent limitations in this Order will be modified as necessary to reflect updated water quality objectives. Adoption of effluent limitations contained in this Order are not intended to restrict in any way future modifications based on legally adopted water quality objectives.

Self-Monitoring Program

19. The discharger shall comply with the Self-Monitoring Program (SMP) for this Order as adopted by the Board. The SMPs may be amended by the Executive Officer pursuant to U.S. EPA regulation 40 CFR122.62, 122.63, and 124.5.

Standard Provisions and Reporting Requirements

20. The discharger shall comply with all applicable items of the attached Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (the Standard Provisions), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the specifications of this Order shall apply.

Change in Control or Ownership

21. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board.

22. To assume responsibility for and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions & Reporting Requirements, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

Permit Reopener

23. The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order will or have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.

NPDES Permit

24. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective December 1, 2002, provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

Order Expiration and Reapplication

25. This Order expires October 31, 2007.

26. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 18, 2002.

LORETTA K. BARSAMIAN
Executive Officer

Attachments

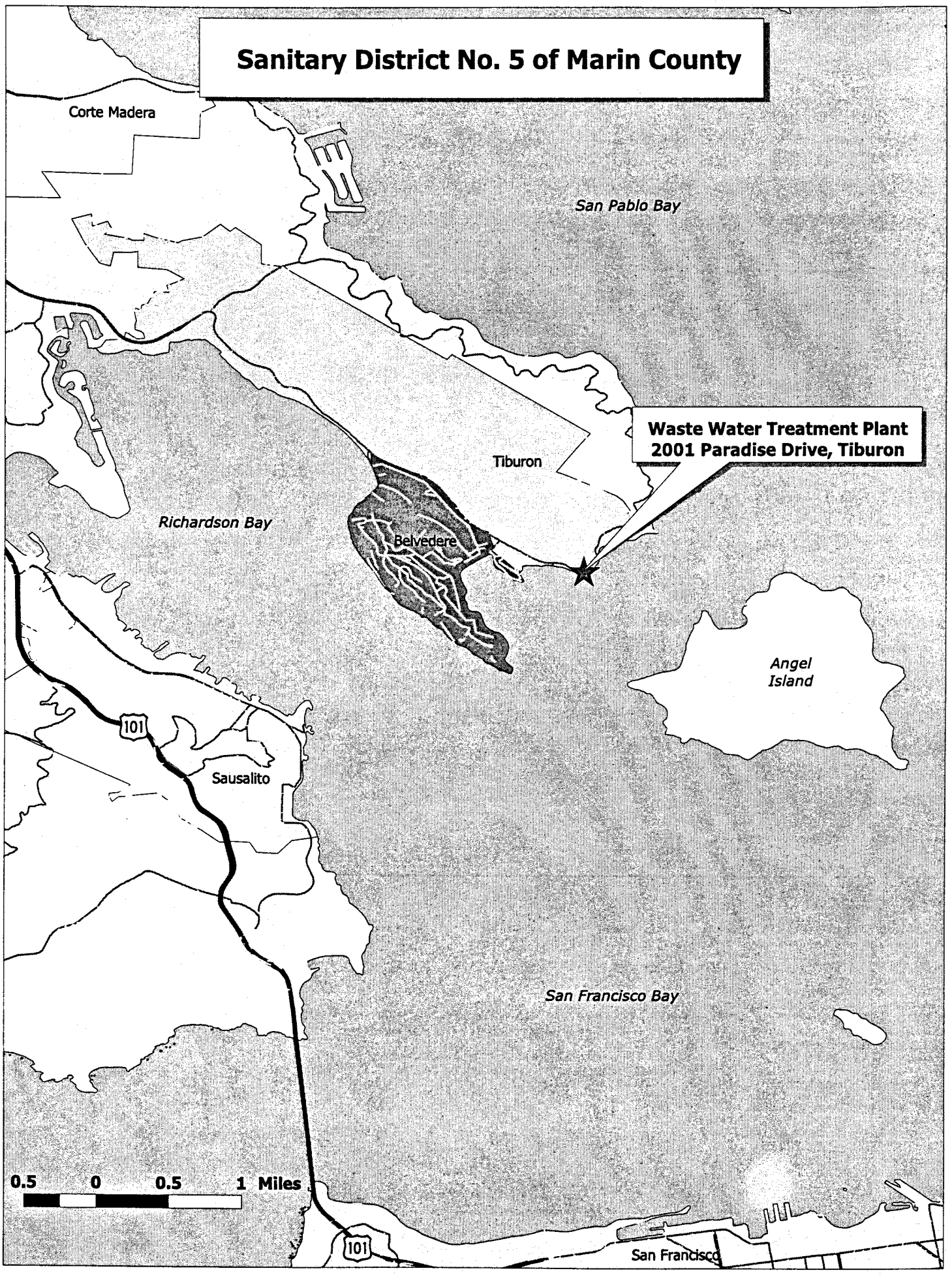
A. Discharge Facility Location Map
B. Discharge Facility Treatment Process Diagram
C. Self-Monitoring Program
D. Fact Sheet For NPDES Permit And Waste Discharge Requirements
E. Discharger Feasibility Study, May 18, 2002
F. Discharger Comments, July 19, 2002
G. Response to Discharger Comments

Standard Language And Other References Available Online

Document	URL
Standard Provisions and Reporting Requirements, August 1993	http://www.swrcb.ca.gov/~rwqcb2/Agenda/04-17-02/res74-10standprov.doc
Board Resolution No. 74-10: Policy Regarding Waste Discharger's Responsibilities to Develop and Implement Contingency Plans to Assure Continuous Operation of Facilities for the Collection, Treatment and Disposal of Waste	http://www.swrcb.ca.gov/~rwqcb2/Agenda/04-17-02/res74-10.doc
Staff Report: Statistical Analysis of Pooled Data from Regionwide UltraClean Mercury Sampling for Municipal Dischargers	http://www.swrcb.ca.gov/~rwqcb2/Agenda/04-17-02/potwhgstatisticreport.pdf
August 6, 2001 Regional Board letter: Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy	http://www.swrcb.ca.gov/~rwqcb2/Agenda/04-17-02/sip13267final.doc

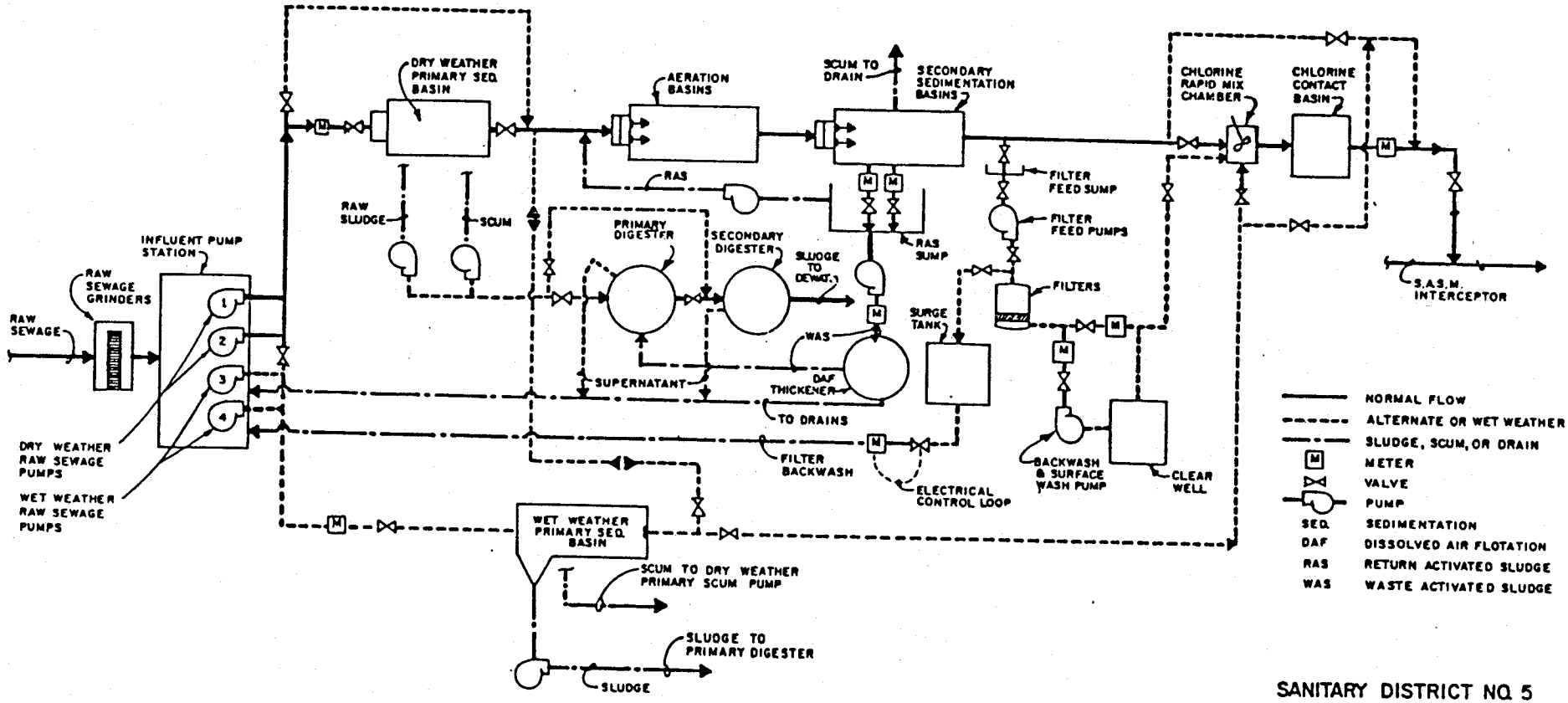
Attachment A.

Discharge Facility Location Map


Sanitary District No. 5 of Marin County
Corte Madera
San Pablo Bay
Waste Water Treatment Plant
2001 Paradise Drive, Tiburon
Tiburon
Richardson Bay
Belvedere
Angel
Island
101
Sausalito
San Francisco Bay
0.5 0 0.5 1 Miles
101
San Francisco

Attachment B.

Discharge Facility Treatment Process Diagram



SANITARY DISTRICT NO. 5
OF MARIN COUNTY

PLANT FLOW SCHEMATIC

SCHEMATIC OF WASTEWATER FLOW
SANITARY DISTRICT NO. 5 OF MARIN
TIBURON, CALIFORNIA
DISCHARGE SERIAL NO. 001
MARCH, 1984

PG 1 OF 1

FIGURE IB-3

Attachment C.

Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

SANITARY DISTRICT NO. 5

WASTEWATER TREATMENT PLANT

MARIN COUNTY

NPDES PERMIT NO. CA0037753

ORDER NO. R2-2002 - 0097

Consists of:

Part A

Adopted August 1993

And

Part B

Table Of Contents

List of Tables

I. Station Descriptions

NOTE: A sketch showing the locations of all sampling and observation stations shall be included in the Annual Report, and in the monthly report if stations change.

Station	Description
A. Influent	
A-001	At any point in the treatment facilities upstream of the primary sedimentation basins at which all waste tributary to the treatment system is present, and preceding any phase of treatment.
B. Effluent	
E-001	At any point in the outfall between the point of discharge and the point at which all waste tributary to the outfall is present. (May be the same as E-001-D).
E-001-D	At any point in the disinfection facilities for E-001 at which adequate contact with the disinfectant is assured.
E-001-S	At any point in the disposal facilities following dechlorination.
C. RECEIVING WATERS	
C-1	At a point in Raccoon Straits directly above the center of the discharge diffuser.
C-2	At a point in Raccoon Straits located 200 feet upstream from the center of the discharge diffuser.
C-3	At a point in Raccoon Straits located 200 feet downstream from the center of the discharge diffuser.
C-4	At a point in Raccoon Straits located 1000 feet upstream from the center of the discharge diffuser.
D. LAND OBSERVATIONS	
P-1 thru P-'n'	Located at the corners and midpoints of the perimeter fenceline surrounding the treatment facilities. (A sketch showing the locations of these stations will accompany each report).
E. OVERFLOWS AND BYPASSES	
O-1 thru O-'n'	At points in the collection system including manholes, pump stations, or any other location where overflows or bypasses occur. (A sketch showing the locations of these stations will accompany each report, if appropriate).

II. Schedule Of Sampling, Analyses And Observations

The schedule of sampling, analysis and observation shall be that given in Table 1 below. Sampling and analysis of additional constituents is required pursuant to Table 1 of the Regional Board's August 6, 2001 letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy.*

Table 1. Schedule Of Sampling, Analyses And Observations

CTR No.	Parameter	Units	Sample Type [1]	Sampling Station				
				A-001 Influent	E-001-D	E-001-S	E-001: Effluent to Raccoon Straits	
				C-24	G	C-24	G	C-24
	Flow Rate	MGD	[2]	Cont.		Cont.		Cont.
	pH	pH units	[5]			Cont.		
	Temperature	°C	[5]					
	Dissolved Oxygen	mg/L	[5]					
	$BOD_5$20°C	mg/L		W				W
	TSS	mg/L		3/W				3/W
	Oil & Grease	mg/L	[3]				Q	
	Settleable Matter	ml/l-hr					M	
	Total Coliform	MPN/100 ml			W			
	Chlorine Residual	mg/L	[4]			Cont/2H		Cont/2H
	Acute Toxicity	% Survival	[5]					M
	Chronic Toxicity		[6]					2/5Y
6	Copper	µg/L						M
7	Lead	µg/L						M
8	Mercury	µg/L & kg/mo	[7]				M	
9	Nickel	µg/L						M
10	Selenium	µg/L						M
11.	Silver	µg/L						M
13	Zinc	µg/L						M
14	Cyanide	µg/L	[8]				M	

LEGEND FOR TABLE 1

Sampling Stations:
A = treatment facility influent
E = treatment facility effluent
OV = overflow and bypass points
P = treatment facility perimeter points

Types of Samples:
C-24 = composite sample, 24 hours (includes continuous sampling, such as for flows)
C-X = composite sample, X hours
G = grab sample
O = observation

Frequency of Sampling:
Cont. = continuous
Cont/D= continuous monitoring & daily reporting
D = once each day
E = each occurrence
H = once each hour (at hourly intervals)
M = once each month
W = once each week
Y = once each calendar year
2/5Y = twice in five years, on dry weather event and once wet weather event
3/W = three times each calendar week (on separate days)
Q = once each calendar quarter

Parameter and Unit Abbreviations:

$BOD_{5\ 20^{\circ}C}$ = Biochemical Oxygen Demand, 5-day, at 20° C
$CBOD_{520^{\circ}C}$ = Carbonaceous BOD, 5-day, at 20° C
D.O. = Dissolved Oxygen
PAHs = Polynuclear Aromatic Hydrocarbons
TSS = Total Suspended Solids
Est V = Estimated Volume (gallons)
MGD = million gallons per day
mg/L = milligrams per liter
ml/L-hr= milliliters per liter, per hour
µg/L = micrograms per liter
kg/d = kilograms per day
kg/mo = kilograms per month
MPN/100 ml = Most Probable Number per 100 milliliters

FOOTNOTES FOR TABLE 1

[1] Additional details regarding sampling, analyses and observations are given in Section III of this SMP, Specifications for Sampling, Analyses and Observations.

[2] Flow Monitoring.

Continuous flow monitoring depicted in Table 1 shall be conducted by continuous measurement and reporting of the following parameters:

a. Influent (A-001), and Effluent (E-001):
Daily:
Average Daily Flow (MGD)
Maximum Daily Flow (MGD)
Minimum Daily Flow (MGD).

b. Monthly: The same values as given in a. above, for the calendar month.

[3] Oil & Grease Monitoring.

Each Oil & Grease sample event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus 5 %. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.

[4] Disinfection Process Monitoring.

Chlorine Residual Monitoring.

During all times when chlorination is used for disinfection of the effluent, effluent chlorine residual concentrations shall be monitored continuously, or by grab samples taken every two hours. Grab samples may be taken by hand or by automated means using in-line equipment such as three-way valves and chlorine residual analyzers. Chlorine residual concentrations shall be monitored and reported for sampling points both prior to and following dechlorination. Chlorine dosage (kg/day) shall be recorded on a daily basis and dechlorination chemical dosage and/or residual (if desired to demonstrate chlorine exceedences are false positives).

[5] Acute Toxicity Monitoring (Flow-through bioassay tests).

The following parameters shall be monitored on the sample stream used for the acute toxicity bioassays, at the start of the bioassay test and daily for the duration of the bioassay test, and the results reported:

- flow rate,
- water hardness, (Hardness shall be determined using the latest version of U.S. EPA Method 130.2. Alternative methods of analysis must be approved by the Executive Officer)
- alkalinity,
- pH,
- temperature,
- dissolved oxygen,
- and ammonia nitrogen.

If the fish survival rate in the effluent is less than 70% or if the control fish survival rate is less than 90%, bioassay test shall be restarted with new batches of fish and continue back to back until compliance is demonstrated.

[6] Chronic Toxicity Monitoring (See also Provision 7. of this Order):

Chronic Toxicity Monitoring Requirements

a. *Sampling:* The discharger shall collect 24-hour composite samples of treatment plant effluent at Sampling Station E-001, for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

b. *Test Species:* Chronic toxicity shall be monitored by using critical life stage test(s) and the most sensitive test specie(s) identified by screening phase testing or previous testing conducted under the ETCP. Test specie(s) shall be approved by the Executive Officer. Two test species may be required if test data indicate that there is alternating sensitivity between the two species.

Frequency:

a. *Routine Monitoring:* To be determined based on results of initial chronic toxicity screening. If the discharge demonstrates chronic toxicity, routine monitoring will be required. However, if the discharge demonstrates no chronic toxicity in excess of the triggers specified in the "Conditions for Accelerated Monitoring" subsection below, the monitoring frequency will be twice during the next five years (2/5Y), once during wet weather, and once during dry weather.

b. *Accelerated Monitoring:* Quarterly, or as otherwise specified by the Executive Officer.

Methodology: Sample collection, handling and preservation shall be in accordance with U.S. EPA protocols. The test methodology used shall be in accordance with the references cited in this Permit, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.

Dilution Series: The discharger shall conduct tests at 2%, 5%, 10%, 20%, and 40%. The "%" represents percent effluent as discharged.

Chronic Toxicity Reporting Requirements

Routine Reporting:

Toxicity test results for the current reporting period shall include, at a minimum, for each test:

- sample date(s)
- test initiation date
- test species
- end point values for each dilution (e.g. number of young, growth rate, percent survival)
- NOEC value(s) in percent effluent
- IC15, IC25, IC40, and IC50 values (or EC15, EC25 ... etc.) in percent effluent
- TUc values (100/NOEC, 100/IC25, and 100/EC25)
- Mean percent mortality (±s.d.) after 96 hours in 100% effluent (if applicable)
- NOEC and LOEC values for reference toxicant test(s)
- IC50 or EC50 value(s) for reference toxicant test(s)
- Available water quality measurements for each test (ex. pH, D.O., temperature, conductivity, hardness, salinity, ammonia)

Compliance Summary

The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above.

Reporting Raw Data in Electronic Format

The discharger shall report all chronic toxicity data upon completion of chronic toxicity testing in the format specified in "Suggested Standardized Reporting Requirements for Monitoring Chronic Toxicity," February 1993, SWRCB. The data shall be submitted in high density, double sided 3.5-inch floppy diskettes, or electronically via e-mail.

[7] Use ultra-clean sampling to the maximum extent practicable and analytical methods for mercury monitoring pursuant to the Regional Board's 13267 letters issued to discharger. ML for compliance purposes is as listed in Table 2 above until the State Board adopts alternative minimum level. Alternative methods of analysis must be approved by the Executive Officer.

[8] The discharger may, at their option, analyze for cyanide as Weak Acid Dissociable Cyanide using protocols specified in Standard Method Part 4500-CN-I, U.S. EPA Method OI 1677, or equivalent alternatives in latest edition. Alternative methods of analysis must be approved by the Executive Officer.

Table 2. Minimum Levels

For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the Minimum Levels given below. All Minimum Levels are expressed as µg/L, approximately equal to parts per billion (ppb).

CTR #	Constituent [a]	Types of Analytical Methods [b]											
		GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPG FAA	HYD-RIDE	CVAA	DCP
6.	Copper [c]					25	5	10	0.5	2			1,000
7.	Lead					20	5	5	0.5	2			10,000
8.	Mercury[d]								0.5			0.2	
9.	Nickel					50	5	20	1	5			1,000
10.	Selenium						5	10	2	5	1		1,000
11.	Silver					10	1	10	0.25	2			1,000
13.	Zinc					20		20	1	10			
14.	Cyanide				5								

Footnotes to Table 2 of Self-Monitoring Program:

[a] According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the reported ML (as described in section 2.4.1). Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration standard. At no time is the Discharger to use analytical data derived from the extrapolation beyond the lowest point of the calibration curve.

[b] Laboratory techniques are defined as follows:

GC = Gas Chromatography;
GCMS = Gas Chromatography/Mass Spectrometry;
LC = High Pressure Liquid Chromatography;
Color = Colorimetric;
FAA = Flame Atomic Absorption;
GFAA = Graphite Furnace Atomic Absorption;
Hydride = Gaseous Hydride Atomic Absorption;
CVAA = Cold Vapor Atomic Absorption;
ICP = Inductively Coupled Plasma;
ICPMS = Inductively Coupled Plasma/Mass Spectrometry;
SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9);
DCP = Direct Current Plasma.

[c] For copper, the Discharger may also use the following laboratory techniques with the relevant minimum level: GFAA with a minimum level of 5 µg/L and SPGFAA with a minimum level of 2 µg/L.

[d] Use ultra-clean sampling (EPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (EPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as EPA 245), if that alternate method has a Minimum Level of 2 ng/l or less.

III. Specifications For Sampling, Analyses And Observations

Sampling, analyses and observations, and recording and reporting of results shall be conducted in accordance with the schedule given in Table 1 of this SMP, and in accordance with the following specifications, as well as all other applicable requirements given in this SMP. All analyses shall be conducted using analytical methods that are commercially and reasonably available, and that provide

quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits.

A. Influent Monitoring.

Influent monitoring identified in Table 1 of this SMP is the minimum required monitoring. Additional sampling and analyses may be required in accordance with Pretreatment Program or Pollution Prevention/Source Control Program requirements.

B. Effluent Monitoring.

Composite samples of effluent shall be collected on varying days selected at random coincident with influent composite sampling unless otherwise stipulated. The Executive Officer may approve an alternative sampling plan if it is demonstrated to the Executive Officer's satisfaction that expected operating conditions for the facility warrant a deviation from the standard sampling plan.

Grab samples of effluent shall be collected during periods of maximum peak flows and shall coincide with effluent composite sample days.

Fish bioassay samples shall be collected on days coincident with effluent composite sampling.

Bioassay tests should be performed on effluent samples after chlorination-dechlorination.

Total ammonia nitrogen shall be analyzed and un-ionized ammonia calculated whenever fish bioassay test results fail to meet the specified percent survival.

If two consecutive samples within a 30 day period of a weekly or monthly monitored constituent exceed the monthly average effluent limit for any parameter, or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit, the sampling frequency shall be increased to daily until the additional sampling shows that the most recent 30-day moving average is in compliance with the monthly average limit.

If any maximum daily limit is exceeded, the sampling frequency shall be increased to daily until two samples collected on consecutive days show compliance with the maximum daily limit.

If the final or intermediate results of any single bioassay test indicate a threatened violation (i.e. the percentage of surviving test organisms is less than the required survival percentage), a new test will begin and the Discharger shall investigate the cause of the mortalities and report the finding in the next self-monitoring report.

Chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, grab samples shall be collected at least every 30 minutes until compliance is achieved.

C. Storm Water

If all storm water is not directed back to the headworks during the wet season (October 1 to April 30) the Discharger shall:

Conduct visual observations of the storm water discharge locations during at least one storm event per month that produces significant storm water discharge, and observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, odor, etc.

Measure (or estimate) the total volume of storm water discharge.

Collect and analyze grab samples of storm water discharge from at least two storm events that produce significant storm water discharge for: oil and grease, pH, total suspended solids (TSS), specific conductance, and toxic chemicals and other pollutants that have a reasonable potential to be present in significant quantities in storm water discharge.

The grab sample(s) shall be taken during the first thirty minutes of the discharge. If collection of the grab sample(s) during the first 30 minutes is impracticable, grab sample(s) can be taken during the first hour of the discharge, and the Discharger shall explain in the annual monitoring report why the grab sample(s) could not be taken in the first 30 minutes.

Testing for the presence of non-storm water discharges shall be conducted no less than twice during the dry season (May to September) at all storm water discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; and/or analysis and validation of accurate piping schematics. Records shall be maintained of the description of the method used, date of testing, locations observed, and test results.

Samples shall be collected from all locations where storm water is discharged. Samples must represent the quality and quantity of storm water discharged from the facility. If a facility discharges storm water at multiple locations, the Discharger may sample a reduced number of locations if it is established and documented in the monitoring program that storm water discharges from different locations are substantially identical.

Records of all storm water monitoring information and copies of all reports required by this permit shall be retained for a period of at least three years from the date of sampling, observation, or report. If the Discharger obtains a separate stormwater permit under the provisions of the Statewide NPDES Permit for Stormwater, the Executive Officer will delete these storm water monitoring requirements from this Self-Monitoring Program.

IV. Reporting Requirements

A. General Reporting Requirements are described in Section E of the Regional Board's *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits*, dated August 1993.

B. Modifications to Self-Monitoring Program, Part A:

1. If any discrepancies exist between Part A and Part B of the SMP, Part B prevails.

2. Sections C.3., C.4., C.5. of Part A are satisfied by participation in the Regional Monitoring Program.

3. Sections D.4., and E.3. of Part A are exclusions to the Self- Monitoring Program.

4. Section C.2.a of Part A, shall be modified as follows:

If additional influent or effluent sampling beyond that required in Table 1 of Part B is done voluntarily or to fulfill any requirements in this permit other than those specified in Table 1 or Part B, corresponding collection of effluent or influent samples is not required by this section. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other requirements of this permit.

5. Section C.2.b of Part A shall be modified as follows:

   Grab samples of effluent shall be collected during periods of maximum peak flows at a frequency specified in Table 1 of Part B, shall coincide with effluent composite sample days, and shall be analyzed for the constituents specified in Table 1.

6. Section C.2.c of Part A shall be modified as follows (Sections C.2.c(1) and (2) are unchanged):

   Effluent sampling will occur on at least one day of any multiple-day flow-through bioassay test required by Table 1 in Part B.

7. Section C.2.d. of Part A shall be modified as follows:

   d. If two consecutive samples of a constituent monitored on a weekly or monthly basis in a 30 day period exceed the monthly average effluent limit for any parameter, (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the sampling frequency shall be repeated once within 24 hours after results are received that indicate an exceedance of the monthly average effluent limit for that parameter. Repeat sampling shall occur in this way until the additional sampling shows two consecutive samples are in compliance with the monthly average limit

8. Section C.2.h of Part A shall be amended as follows:

   h. When any type of bypass occurs (except for bypasses caused by high wet weather inflow), composite samples shall be collected on a daily basis for all constituents at all affected discharge points which have effluent limits for the duration of the bypass.

      When bypassing occurs from any treatment process (primary, secondary, chlorination, dechlorination, etc.) in the treatment facilities during high wet weather inflow, the self-monitoring program shall include the following sampling and analyses:

      i. When bypassing occurs from any primary or secondary treatment unit(s), composite samples for the duration of the bypass event for BOD and TSS analyses, and continuous monitoring of flow. If BOD or TSS , exceed the effluent limits, the bypass monitoring shall be expanded to include all constituents that have effluent limits for the duration of the bypass, until the BOD and TSS values stabilize to compliance with effluent limitations.

      ii. When bypassing the chlorination process, grab samples at least daily for Fecal Coliform analyses; and continuous monitoring of flow.

iii. When bypassing the dechlorination process, grab samples hourly for chlorine residual; and continuous monitoring of flow.

9. Insert the following into Section D.1 of Part A:

The requirements of this section only apply when receiving water standard observations are specified in table 1 of Part B. Receiving water standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

10. Insert the following into Section D.3 of Part A:

The requirements of this section only apply when beach and shoreline standard observations are specified in Table 1 of Part B. Beach and shoreline standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

11. Insert the following into Section D.5 of Part A:

The requirements of this section only apply when facility periphery standard observations are specified in Table 1 of Part B. Facility periphery standard observations are not specified in Table 1 of Part B of this permit. Therefore, the requirements of this section do not apply.

12. Amend Section G. of Part A, Definition of Terms, as follows:

a. *Grab Sample.* A grab sample is defined as an individual sample collected in a short period of time not exceeding fifteen minutes. A grab sample represents only the conditions that exist at the time the sample is collected. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may not necessarily correspond with periods of peak hydraulic conditions. Grab samples are used primarily in determining compliance with daily and instantaneous maximum or minimum limits.

b. *Composite Sample.* A composite sample is defined as a sample composed of individual grab samples collected manually or by an autosampling device on the basis of time and/or flow as specified in Table 1 of Part B. For flow-based compositing, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent from the representative flow rate of the waste stream being sampled measured at the time of grab sample collection. Alternately, equal volume grab samples may be individually analyzed and the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples forming time-based composite samples shall be collected at intervals not greater than those specified in Table 1 of Part B. The quantity of each grab sample forming a time-based composite sample shall be a set or flow proportional volume as specified in Table 1 of Part B. For Oil and Grease a minimum of four grab samples, one every six hours over a 24-hour period shall be used. If a particular time or flow-based composite sampling protocol is not specified in Table 1 of Part B, the Discharger shall determine and implement the most representative sampling protocol for the given parameter subject to approval by the Executive Officer.

c. *Average.* Average values for daily and monthly values are obtained by taking the sum of all daily values divided by the number of all daily values measured during the specified period. In calculating the monthly average, when there is more than one value for a given day, all the values for that day shall be averaged and the average value used as the daily value for that day.

C. Monthly Self-Monitoring Report

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Regional Board in accordance with the requirements listed below. The purpose of the report is to document treatment performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices. The report shall be submitted to the Board **no later than forty-five (45) days after the end of the reporting month.**

1. Letter of Transmittal

Each report shall be submitted with a letter of transmittal. This letter shall include the following:

a. Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;

b. Details of the violations (parameters, magnitude, test results, frequency, and dates), and:

i. The cause of the violations;

ii. Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory.

c. The letter of transmittal shall be signed by the Discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

" I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

2. Compliance Evaluation Summary

Each report shall include a compliance evaluation summary. This summary shall include, for each parameter for which effluent limits are specified in the Permit, the number of samples taken during the monitoring period, and the number of samples in violation of applicable effluent limits.

3. Results of Analyses and Observations

a. Tabulations of all required analyses and observations, including parameter, sample date and time, sample station, and test result.

b. If any parameter specified in Table 1 of this SMP is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.

c. Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

4. Effluent Data Summary - U.S. EPA NPDES Discharge Monitoring Reports.

Summary tabulations of monitoring data including maximum, minimum and average values for subject monitoring period shall be reported in accordance with the format given by the U.S. EPA NPDES Discharge Monitoring Report(s) (DMRs; US EPA Form 3320-1 or successor). Copies of these DMRs shall be provided to U.S. EPA as required by U.S. EPA.

5. Data Reporting for Results Not Yet Available

The discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in timely manner. The Regional Board recognizes that certain analyses require additional time in order to complete analytical processes and result reporting. For cases where required monitoring parameters require additional time to complete analytical processes and reporting, and results are not available in time to be included in the SMR for the subject monitoring period, such cases shall be described in the SMR. Data for these parameters, and relevant discussions of any observed violations, shall be included in the next following SMR.

6. Reporting Data in Electronic Format

The discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The discharger is currently submitting SMRs electronically in a format approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS). The ERS format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the SMP, then the approved ERS requirements supercede.

D. Self-Monitoring Program Annual Report (Annual Report)

An Annual Report shall be submitted for each calendar year. The report shall be submitted to the Regional Board **by February 15 of the following year**. This report shall include the following:

- Both tabular and graphical summaries of monitoring data collected during the calendar year that characterize treatment plant performance and compliance with waste discharge requirements.

- A comprehensive discussion of treatment plant performance and compliance with waste discharge requirements. This discussion should include any corrective actions taken or planned such as changes to facility equipment or operation practices which may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment or disposal practices.

- A plan view drawing or map showing the Dischargers' facility, flow routing and sampling and observation station locations.

E. Spill Reports.

A report shall be made of any spill of oil or other hazardous material.

The spill shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Spills shall be reported by telephone as follows:

During weekdays, during office hours of 8 am to 5 pm, to Ray Balcom at the Regional Board:

Current telephone number: (510) 622 – 2312, (510) 622-2460 (FAX).

During non-office hours, to the State Office of Emergency Services:

Current telephone number: (800) 852 - 7550.

A written report shall be submitted to the Regional Board within five (5) working days following telephone notification, unless directed otherwise by Board staff. A report submitted by facsimile transmission is acceptable for this reporting. The written report shall include the following:

- Date and time of spill, and duration if known.
- Location of spill (street address or description of location).
- Nature of material spilled.
- Quantity of material involved.
- Receiving water body affected.
- Cause of spill.
- Observed impacts to receiving waters (e.g., discoloration, oil sheen, fishkill).
- Corrective actions that were taken to contain, minimize or cleanup the spill.
- Future corrective actions planned to be taken in order to prevent recurrence, and time schedule of implementation.
- Persons or agencies contacted.

F. Reports of Collection System Overflows.

Overflows of sewage from the Discharger's collection system, other than overflows specifically addressed elsewhere in this Order and SMP, shall be reported to the Regional Board in accordance with the following:

1. *Overflows in excess of 1,000 gallons.*

   a. Overflows in excess of 1,000 gallons shall be reported by telephone and written report, as follows:

   b. Overflows shall be reported by telephone as soon as possible and no later than 24 hours following occurrence or discharger's knowledge of occurrence. Notification shall be made as follows:

   c. Notify the current Board staff inspector, or case handler, by phone call or message, or by facsimile:

      - [current staff inspector, Ray Balcom, phone number (510) 622 –2312]

- [current staff case handler: Ken Katen, phone number (510) 622 – 2485]
- [current Regional Board Fax number: (510) 622 – 2460];

d. Notify the State Office of Emergency Services, current phone number: (800) 852 - 7550.

e. Submit a written report of the incident in follow-up to telephone notification. The written report shall be submitted along with the regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff, and shall include the following:

- Estimated date and time of overflow start and end.
- Location of overflow (street address or description of location).
- Estimated volume of overflow.
- Final disposition of overflowed wastewater (to land, storm drain, surface water body).
- Include the name of any receiving water body affected.
- Cause of overflow.
- Observed impacts to receiving waters if any (e.g., discoloration, fish kill).
- Corrective actions that were taken to contain, minimize or cleanup the overflow.
- Future corrective actions planned to be taken to prevent recurrence and time schedule of implementation.
- Persons or agencies contacted.

2. Overflows less than 1,000 gallons.

Overflows less than 1,000 gallons shall be reported by written report, as follows:

a. The discharge shall prepare and retain records of such overflows, with records available for review by Board staff upon request.

b. The records for these overflows shall include the information as listed in 1.e, above.

c. A summary of these overflows shall be submitted to the Regional Board annually, as part of the Discharger's Self-Monitoring Program Annual Report.

G. Reports of Treatment Plant Process Bypass or Significant Non-Compliance.

The following requirements apply to all treatment plant bypasses and significant non-compliance occurrences, except for bypasses under the conditions contained in 40 CFR Part 122.41 (m)(4) as stated in Standard Provision A.13:

1. A report shall be made of any incident, other than wet weather discharges or bypasses addressed elsewhere in this permit and SMP, where the Discharger:

a. experiences or intends to experience a bypass of any treatment process, or

b. experiences violation or threatened violation of any daily maximum effluent limit contained in this Permit or other incident of significant non-compliance, due to:

i. maintenance work, power failures or breakdown of waste treatment equipment, or

ii. accidents caused by human error or negligence, or

iii. other causes such as acts of nature.

2. Such incidents shall be reported to the Regional Board in accordance with the following:

   a. Notify Regional Board staff by telephone:

      i. within 24 hours of the time the Discharger becomes aware of the incident, for incidents that have occurred, and

      ii. as soon as possible in advance of incidents that have not yet occurred.

   b. Submit a written report of the incident in follow-up to telephone notification.

   c. The written report shall be submitted along with regular self-monitoring report for the reporting period of the incident, unless directed otherwise by Board staff.

   d. The written report for a treatment process bypass shall include the following:

      i. Identification of treatment process bypassed;

      ii. Date and time of bypass start and end;

      iii. Total duration of the incident;

      iv. Estimated total volume;

      v. Description of, or reference to, other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.

   e. The written report for violations of daily maximum effluent limits or similar significant non-compliance shall include information as described in section VII.B. of this SMP.

3. During any treatment process bypass, the Discharger shall conduct additional monitoring as described in Section V of this SMP. The results of such monitoring shall be included in the regular SMR for the reporting period of the bypass.

V. Recording Requirements - Records To Be Maintained

Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements including self-monitoring program requirements, shall be maintained by the Discharger in a manner and at a location (e.g., wastewater treatment plant or discharger offices) such that the records are accessible to Board staff. These records shall be retained by the Discharger for a minimum of three years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Regional Board or by the Regional Administrator of the US EPA, Region IX.

Records to be maintained shall include the following:

A. Parameter Sampling and Analyses, and Observations.

For each sample, analysis or observation conducted, records shall include the following:

1. Identity of parameter
2. Identity of sampling or observation station, consistent with the station descriptions given in this SMP.
3. Date and time of sampling or observation.
4. Method of sampling (grab, composite, other method).
5. Date and time analysis started and completed, and name of personnel or contract laboratory performing the analysis.
6. Reference or description of procedure(s) used for sample preservation and handling, and analytical method(s) used.
7. Calculations of results.
8. Analytical method detection limits and related quantitation parameters.
9. Results of analyses or observations.

B. Flow Monitoring Data.

For all required flow monitoring (e.g., influent and effluent flows), records shall include the following:

1. Total flow or volume, for each day.
2. Maximum, minimum and average daily flows for each calendar month.

C. Wastewater Treatment Process Solids.

1. For each treatment unit process which involves solid removal from the wastewater stream, records shall include the following:
   a. Total volume and/or mass quantification of solids removed from each unit (e.g., grit, skimmings, undigested sludge), for each calendar month; and
   b. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
2. For final dewatered sludge from the treatment plant as a whole, records shall include the following:
   a. Total volume and/or mass quantification of dewatered sludge, for each calendar month;
   a. Solids content of the dewatered sludge; and

b. Final disposition of dewatered sludge (point of disposal location and disposal method).

D. Disinfection Process.

For the disinfection process, records shall be maintained documenting process operation and performance, including the following:

1. For bacteriological analyses:

   a. Date and time of each sample collected;

   b. Wastewater flow rate at the time of sample collection;

   c. Results of sample analyses (coliform count);

   d. Required statistical parameters of cumulative coliform values (e.g., moving median or geometric mean for number of samples or sampling period identified in waste discharge requirements).

2. For chlorination process, at least daily average values for the following:

   a. Chlorine residual in contact basin (mg/L);

   b. Contact time (minutes);

   c. Chlorine dosage (kg/day);

   d. Dechlorination chemical dosage (kg/day)

E. Treatment Process Bypasses.

A chronological log of all treatment process bypasses, other than wet weather bypasses addressed elsewhere in this permit and SMP, including the following:

1. Identification of treatment process bypassed;

2. Date(s) and times of bypass beginning and end;

3. Total bypass duration;

4. Estimated total volume;

5. Description of, or reference to other report(s) describing, bypass event, cause, corrective actions taken, and any additional monitoring conducted.

F. Collection System Overflows

A chronological log of all collection system overflows, including the following:

1. Location of overflow;

2. Date(s) and times of overflow beginning and end;

3. Total overflow duration;

4. Estimated total volume;

5. Description of, or reference to other report(s) describing, overflow event, cause, corrective actions taken, and any additional monitoring conducted.

VI. Selected Constituents Monitoring

A. Effluent monitoring shall include evaluation for all constituents listed in Table 1 by sampling and analysis of final effluent.

B. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective water quality objectives.

VII. Monitoring Methods And Minimum Detection Levels

The Discharger may use the methods listed in Table 2, above, or alternate test procedures that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5 (revised as of May 14, 1999).

VIII. Self-Monitoring Program Certification

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. R2-2002-0097.

2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.

3. Is effective as of **December 1, 2002**

Loretta K. Barsamian
LORETTA K. BARSAMIAN
Executive Officer

Attachments

Attachment A: Chronic Toxicity – Definition of Terms and Screening Phase Requirements

ATTACHMENT A

CHRONIC TOXICITY
DEFINITION OF TERMS & SCREENING PHASE REQUIREMENTS

I. Definition of Terms

A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25}. If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.

B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Karber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25% of the test organisms.

C. Inhibition Concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-lethal, non-quantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25% reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as EPA's Bootstrap Procedure.

D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

A. The discharger shall perform screening phase monitoring:
   1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to pretreatment, source control, and waste minimization efforts, or
   2. Prior to Permit reissuance. Screening phase monitoring data shall be included in the NPDES Permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.

B. Design of the screening phase shall, at a minimum, consist of the following elements:
   1. Use of test species specified in Tables 1 and 2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer;
   2. Two stages:
      a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table 3 (attached); and
      b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
   3. Appropriate controls; and
   4. Concurrent reference toxicant tests.

C. The discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.

TABLE C 1
CRITICAL LIFE STAGE TOXICITY TESTS FOR ESTUARINE WATERS

SPECIES	SCIENTIFIC NAME	EFFECT	TEST DURATION	REFER-ENCE
alga	(Skeletonema costatum)	growth rate	4 days	1
	(Thalassiosira pseudonana)	growth rate		
red alga	(Champia parvula)	number of cystocarps	7-9 days	5
giant kelp	(Macrocystis pyrifera)	percent germination; germ tube length	48 hours	3
abalone	(Haliotis rufescens)	abnormal shell development	48 hours	3
oyster	(Crassostrea gigas)	abnormal shell development;	48 hours	2
mussel	(Mytilus edulis)	percent survival		
echinoderms			1 hour	4
urchins	Strongylocentrotus purpuratus,	percent fertilization		
	S. franciscanus)	percent fertilization		
sand dollar	Dendraster excentricus	percent fertilization		
shrimp	(Mysidopsis bahia)	percent survival; growth; fecundity	7 days	5
silversides	(Menidia beryllina)	larval growth rate; percent survival	7 days	5

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for conducting static 96-hour toxicity tests with microalgae. Procedure E 1218-90. ASTM Philadelphia, PA.
2. American Society for Testing Materials (ASTM). 1989. Standard Practice for conducting static acute toxicity tests with larvae of four species of bivalve molluscs. Procedure E 724-89. ASTM, Philadelphia, PA.
3. Anderson, B.B. J.W. Hunt, S.L. Turpen, A.R. Coulon, M. Martin, D.L. McKeown, and F.H. Palmer. 1990. Procedures manual for conducting toxicity tests developed by the marine bioassay project. California State Water Resources Control Board, Sacramento.
4. Dinnel, P.J., J. Link, and Q. Stober. 1987. Improved methodology for sea urchin sperm cell bioassay for marine waters. Archives of Environmental Contamination and Toxicology 16:23-32. and S.L. Anderson. September 1, 1989. Technical Memorandum. San Francisco Bay Regional Water Quality Control Board, Oakland, CA.
5. Weber, C.I., W.B. Horning, II, D.J. Klem, T.W. Neiheisel, P.A. Lewis, E.L. Robinson, J. Menkedick, and F. Kessler (eds.). 1988. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms. EPA-600/4-87/028. National Technical Information Service, Springfield, VA.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

1515 CLAY STREET, SUITE 1400

OAKLAND, CA 94612

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FACT SHEET

for

NPDES PERMIT and WASTE DISCHARGE REQUIREMENTS for

SANITARY DISTRICT NO. 5

Wastewater Treatment Plant

Marin County

NPDES Permit No. CA0037753

TABLE OF CONTENTS

LIST OF TABLES INCLUDED IN TEXT

LIST OF TABLES ATTACHED AFTER THE TEXT

I. PUBLIC NOTICE:

1. Written Comments

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments should be submitted to the Board no later than 5:00 p.m. on July 20, 2002.

2. Public Hearing

- The draft permit will be considered for adoption by the California Regional Water Quality Control Board, San Francisco Region (the Board) at a public hearing during the Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1st floor Auditorium.
- This meeting will be held on: September 18, 2002, starting at 9:00 am.

3. Additional Information

- For additional information about this matter, interested persons should contact Board staff member **Mr. Ken Katen, Phone: (510) 622-2485; email: kk@rb2.swrcb.ca.gov**

This Fact Sheet contains information regarding an application for waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for Sanitary District No. 5 for discharges from its secondary level wastewater treatment plant. This Fact Sheet describes the factual, legal, and methodological basis for the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the limits.

II. INTRODUCTION

Sanitary District No. 5 (the Discharger) applied to the Board for reissuance of its NPDES permit for discharge of pollutants from its wastewater treatment plant (the WWTP) into State Waters.

The Discharger owns and operates the WWTP, which provides secondary level treatment of wastewater from domestic and commercial sources within Sanitary District No. 5. The Discharger's service area includes the Town of Tiburon, the City of Belvedere, and unincorporated areas in their general vicinity. The current population in the Discharger's service area is approximately 9,000.

The Discharger's treatment process consists of primary sedimentation, biological treatment using activated sludge, secondary sedimentation, chlorine disinfection and dechlorination. Treated, disinfected and dechlorinated effluent from the WWTP is combined with treated, disinfected and dechlorinated effluent from the Sewerage Agency of Southern Marin, and the combined effluent is discharged into Raccoon Straits in Central San Francisco Bay. The combined effluent is discharged through a submerged diffuser at latitude 37 degrees 52 minutes 12 seconds North and longitude 122 degrees 27 minutes 5 seconds West. The submerged diffuser is 840 feet offshore at a depth of 84 feet. The Discharger claims, based on studies probably conducted in the 1980s, that its effluent receives an initial dilution of 1400 to 1 (1400:1). This Discharge is classified by the Board as a deepwater discharge.

The treatment plant has an average dry weather design flow of 0.98 million gallons per day (MGD), and can treat up to 2.3 MGD during wet weather. When flows exceed 2.3 MGD, the activated sludge and secondary clarification processes may be partially bypassed, with the final effluent being a blend of disinfected, primary-treated effluent and disinfected, secondary-treated effluent, to avoid hydraulic overload of the activated sludge process and associated solids inventory washout. During the period January 1999 – December 2001 the WWTP's average flow was approximately 0.75 MGD. The U.S. Environmental Protection Agency (the U.S. EPA) and the Board have classified the WWTP as a major discharger.

The receiving waters for the subject discharges are the waters of Raccoon Strait in Central San Francisco Bay. Beneficial uses for the Central San Francisco Bay receiving water are identified in the Board's current *Water Quality Plan, San Francisco Bay Basin (Region 2)* (the Basin Plan). Based on Basin Plan Table 2-3 (pg. 2-15), and on known uses of the receiving waters in the vicinity of the discharge, the receiving water's identified beneficial uses are:

- Ocean Commercial and Sport Fishing
- Estuarine Habitat
- Industrial Service Supply
- Fish Migration
- Navigation
- Industrial Process Supply
- Preservation of Rare and Endangered Species
- Water Contact Recreation
- Non-contact Water Recreation
- Shellfish Harvesting
- Fish Spawning
- Wildlife Habitat

Receiving Water Salinity

The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality objectives (WQOs). Freshwater objectives apply to discharges to waters both outside the zone of tidal influence and with salinities lower than 5 parts per thousand (ppt) at least 75 percent of the time. Saltwater objectives shall apply to discharges to waters with salinities greater than 5 ppt at least 75 percent of the time. For discharges to waters with salinities in between the two categories or tidally influenced freshwaters that support estuarine beneficial uses, the objectives shall be the lower of the salt or freshwater objectives, based on ambient hardness, for each substance (Basin Plan, pg. 4 – 13).

The CTR states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable water quality criteria. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the saltwater or freshwater (calculated based on ambient hardness) criteria, for each substance.

The receiving waters for the subject discharge are the waters of Central San Francisco Bay. Board staff evaluated RMP salinity data from the three nearest receiving water stations: Richardson Bay, Point Isabel, and Yerba Buena Island, for the period March 1993 – July 2000, as depicted in the attached Table 8 (Salinity Data). During that period, the receiving water's minimum salinity was 11.6 ppt, its maximum salinity was 30.5 ppt, and its average salinity was 23.9 ppt. These data are all well above both the Basin Plan and CTR thresholds for salt water; therefore the limits in this Order are based on salt water criteria.

III. DESCRIPTION OF EFFLUENT

Board Order No. 95-187 (the previous permit), presently regulates the discharge from the WWTP. The Discharger's treated wastewater has the characteristics summarized in Table A, below. Complete monitoring data are presented in the attached Tables 1 and 2 (Conventional Data and Priority Pollutant Data, respectively). Results for detected organic constituents are included in Table A. All other organic constituents were not detected. The monthly average values in Table A, below, reflect the averages of only the detected values for each parameter. Where a parameter was only detected once, the value is included as both the monthly average and maximum.

Table A. Summary of Effluent Data for Outfall E001

Constituent	Monthly Average	Maximum	Number of Quantified Data	Total Number of Samples
pH	7.4	7.6	36	36
BOD	13.2	33.0	36	36
TSS	8.5	26.7	36	36
Arsenic	4.2	6.9	5	12
Cadmium	1	1	1	11
Chromium	4.15	7.1	4	12
Copper	9.9	24	22	36
Lead	4.8	5.7	3	12
Mercury	0.0053	0.014	24	36
Nickel	6.1	17	4	12
Selenium	5	5	1	17
Silver	4.6	14	6	12
Zinc	31.8	74	11	12
Cyanide	5	5	1	12
Phenol	71	71	1	7

IV. GENERAL RATIONALE

The following documents are the bases for the requirements contained in the proposed Order, and are referred to under the specific rationale section of this Fact Sheet.

- Federal Water Pollution Control Act, as amended (the CWA).
- Code Federal of Regulations, Title 40 - Parts 122-129 (40 CFR Parts 122 - 129) - Protection of Environment, Chapter 1, Environmental Protection Agency, Subchapter D, Water Programs.

- The Board's *Water Quality Control Plan, San Francisco Bay Basin(Region 2)* (the Basin Plan). The Basin Plan defines beneficial uses and contains WQOs for waters of the State within the San Francisco Bay region, including Central San Francisco Bay. The Board adopted the Basin Plan on June 21, 1995 , the State Water Resources Control Board (the State Board) approved it on July 20, 1995 and the Office of Administrative Law approved it on November 13, 1995.

- California Toxics Rule (the CTR), Federal Register, Vol. 65, No. 97, May 18, 2000;

- National Toxics Rule (the NTR) 57 FR 60848, December 22, 1992, as amended;

- The State Board's *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Policy, or SIP).

- the U.S. EPA's 1986 *Quality Criteria for Water, 440/5-86-001*;.

- The U.S. EPA's January 1986 *Ambient Water Quality Criteria for Bacteria – 1986*, 440/5-84-002.

V. SPECIFIC RATIONALE

Several specific factors affecting the development of limitations and requirements in the proposed Order are discussed as follows:

1. Recent Plant Performance

Section 402(o) of the CWA and 40 CFR 122.44(l) require that water quality-based effluent limits (WQBELs) in re-issued permits be at least as stringent as in the previous permit. The SIP specifies that interim effluent limitations, if required, must be based on current treatment facility performance or on existing permit limitations whichever is more stringent. Board staff used best professional judgment (BPJ) to evaluate recent plant performance. Effluent monitoring data collected during the period January 1999 – December 2001 are considered representative of recent plant performance, based on the fact that they account for flow variation due to wet and dry seasons. There are insufficient data to adequately analyze whether most organic pollutants have reasonable potential to cause or contribute to an exceedence of water quality standards (have reasonable potential). The Discharger is complying with the requirements contained in the Board's August 6, 2001 letter formally requiring (pursuant to Section 13267 of the California Water Code) the Discharger to conduct ambient background monitoring and effluent monitoring for those constituents not currently sampled by the RMP and to provide this technical information to the Board (the Board's August 6, 2001 letter). After the required ambient background monitoring is complete, the Board will use the gathered data to conduct the reasonable potential analysis (RPA) to determine if additional WQBELs are required.

2. Impaired Water Bodies in 303(d) List

The U.S. EPA Region 9 office approved the State's 303(d) list of impaired waterbodies on May 12, 1999. The list was prepared in accordance with Section 303(d) of the CWA to identify specific water bodies where it is not expected water quality standards will be met after implementation of technology-based effluent limitations on point sources. The current 303(d) list includes Central San Francisco Bay as impaired by:

- chlordane,
- copper,
- DDT,
- diazinon,
- dieldrin,
- dioxin and furan compounds,
- exotic species,
- mercury,
- total PCBs,
- PCBs (dioxin like), and
- selenium.

The SIP requires that final effluent limits for all 303(d)-listed pollutants be based on wasteload allocations (WLA) contained in total maximum daily loads (TMDLs). The SIP and federal regulations also require that final concentration limits be included for all pollutants demonstrated to have reasonable potential. Where the Discharger has demonstrated infeasibility to meet the final WQBELs for pollutant(s), the SIP requires permits to establish interim performance-based concentration limits (concentration-based IPBLs), and performance-based mass emission limits for bioaccumulative pollutants, together with a compliance schedule for attainment of the final WQBELs. The SIP also requires the inclusion of appropriate provisions for source control in these cases.

3.Basis for Prohibitions

a. Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the Basin Plan, the previous permit and BPJ.

b. Prohibition A.2 (10:1 dilution): This prohibition is based on the Basin Plan. The Basin Plan prohibits discharges not receiving 10:1 dilution (Chapter 4, Discharge Prohibition No. 1). The Basin Plan also identifies exceptions that may be granted under certain conditions.

c. Prohibition A.3 (no bypass): This prohibition is based on the Basin Plan. The Basin Plan prohibits the discharge of partially treated and untreated wastes (Chapter 4, Discharge Prohibition No.15). This prohibition is based on general concepts contained in Sections 13260 through 13264 of the California Water Code relating to the discharge of waste to State waters without filing for and being issued a permit. Under certain circumstances, as stated in 40 CFR 122.41(m)(4), the facilities may bypass waste streams in order to prevent loss of life, personal injury, or severe property damage, or if there were no feasible alternatives to the bypass and the Discharger submitted notices of the anticipated bypass.

d. Prohibition A.4 (flow limit): This prohibition is based on the reliable treatment capacity of the plant. Exceedence of the treatment plant's average dry weather flow design capacity of 0.98 MGD may result in lowering the reliability of compliance with water quality requirements, unless the Discharger demonstrates otherwise through an antidegradation study. This prohibition is based on 40 CFR 122.41(l).

e. Prohibition A.5 (no stormwater pollution, toxic and deleterious substances, contamination): This prohibition is based on the Basin Plan to protect beneficial uses of the receiving water from un-permitted discharges, and the intent of sections 13260 through 13264 of the California Water

Code relating to the discharge of waste to State Waters without filing for and being issued a permit.

4. Basis for Effluent Limitations

a. Effluent Limitations (Discharges to Central San Francisco Bay; listed below):

Permit Limit	Parameter	Units	Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum
B.1.a.	Biochemical Oxygen Demand (BOD)	mg/L	30	45	--	--
B.1.b.	Total Suspended Solids (TSS)	mg/L	30	45	--	--
B.1.c.	Oil & Grease	mg/L	10	--	20	--
B.1.d.	Settleable Matter	ml/L-hr	0.1	--	0.2	--
B.1.e.	Total Chlorine Residual [1]	mg/L	--	--	--	0.0
B.2.	pH	pH Units, >6.0, <9.0				
B.3.	BOD and TSS Removal Rates		>85 %			
B.4.	Total Coliform [2]	MPN/100 ml	240	--	10,000	--

Footnotes to effluent limitations:

(1) Requirement defined as below the limit of detection in the latest edition of *Statistical Methods for Examination of Water and Wastewater*. Compliance with this limitation must be demonstrated at a point in the treatment train downstream from the dechlorination facility.

(2) The total coliform limits are imposed as a 5-day moving median limit of 240 MPN/100mL, and no sample shall exceed 10,000 MPN/100mL as effluent limits.

b. Effluent Limitation B.1.a-e limits are technology-based limits representative of, and intended to ensure, adequate and reliable secondary level wastewater treatment. These limits are based on the Basin Plan (Chapter 4, pg 4-8, and Table 4-2, at pg 4-69). These limits are unchanged from the existing permit, except for the addition of oil and grease. All limits apply independently to the discharge to Central San Francisco Bay.

c. BOD and TSS, 30 mg/L monthly average and 45 mg/L weekly average (Effluent Limitation B.1.a and b): These are standard secondary treatment requirements, and existing permit effluent limitations, that are based on Basin Plan requirements, derived from federal requirements (40 CFR 133.102). With the exception of October 2000, the facility has demonstrated compliance by existing plant performance.

d. Oil & Grease, Settleable Matter and Total Chlorine Residual: These are standard secondary treatment requirements, and existing permit effluent limitations, based on Basin Plan requirements.

e. Effluent Limitation B.2 (pH): This effluent limit is a standard secondary treatment requirement and is unchanged from the existing permit. The limit is based on the Basin Plan (Chapter 4, Table 4-2), which is derived from federal requirements (40 CFR 133.102). This is an existing permit effluent limitation and compliance has been demonstrated by existing plant performance. The Discharger may elect to use continuous on-line monitoring system(s) for measuring pH. In this case, 40 CFR 401.17 (pH Effluent Limitations Under Continuous Monitoring), and BPJ are the basis for the compliance provisions for pH limitations. Excursions outside of the pH effluent limitations are permitted, provided that both of the following conditions are satisfied:

i. The total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and

ii. No individual excursion from the range of pH values shall exceed 60 minutes.

f. Effluent Limitation B.3 (BOD and TSS monthly average 85 percent removal): These are standard secondary treatment requirements and existing permit effluent limitations based on Basin Plan requirements (Table 4-2, pg. 4 – 69), derived from federal requirements (40 CFR 133.102; definition in 133.101). Compliance has been demonstrated by existing plant performance for ordinary flows (dry weather flows and most wet weather flows). During the past 3 years, the Discharger has consistently met these removal efficiency limits.

g. Effluent Limitation B.4 (Total Coliform): The purpose of this effluent limitation is to ensure adequate disinfection of the discharge in order to protect beneficial uses of the receiving waters. Effluent limits are based on water quality objectives for bacteriological parameters for receiving water beneficial uses. Water quality objectives are given in terms of parameters which serve as surrogates for pathogenic organisms. The traditional parameter for this purpose is coliform bacteria, either as total coliform or as fecal coliform. The Basin Plan's Table 4-2 (pg. 4 – 69) and its footnotes allow fecal coliform limitations to be substituted for total coliform limitations provided that the Discharger conclusively demonstrates "through a program approved by the Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving waters". Until the Discharger undertakes a bacteriological study to conclusively demonstrate that substitution of fecal coliform for total coliform limits would be protective of the beneficial uses of the receiving water, the coliform effluent limitation will continue to be expressed as total coliform. Total coliform limits are:

i. The moving median value for the Most Probable Number (MPN) of total coliform bacteria in five (5) consecutive samples shall not exceed 240 MPN/100 ml; and,

ii. Any single sample shall not exceed 10,000 MPN/100 ml

h. Effluent Limitation B.5 (Whole Effluent Toxicity) The Basin Plan specifies a narrative objective for toxicity, requiring that all waters shall be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limits are necessary to ensure that this objective is protected. The acute toxicity limit is based on the Basin Plan (Table 4-4, pg. 4 – 70).

i. Effluent Limitation B.6 (Chronic Toxicity): The chronic toxicity limit is based on the Basin Plan's narrative toxicity definition on Page 3 – 4, and is consistent with the SIP requirements. The Discharger has not performed chronic toxicity monitoring prior to the application of permit renewal.

j. Effluent Limitation B.7 (Toxic Substances):

i. Reasonable Potential Analysis:

1) *RPA Methodology* Title 40 CFR Part 122.44(d)(1)(i) specifies that permits are required to include WQBELs for all pollutants "which the Director determines are or may be

discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard" (have reasonable potential). Thus, the fundamental step in determining whether or not a WQBEL is required is to assess whether a pollutant has reasonable potential. The following section describes the reasonable potential analysis (RPA) and the RPA results for the pollutants identified in the Basin Plan and the CTR.

a) *WQOs and WQCs*: The RPA involves the comparison of effluent data with appropriate Basin Plan WQOs, including narrative toxicity objectives, and the applicable water quality criteria (WQCs) in the CTR and/or NTR. The Basin Plan objectives and CTR criteria are shown in the attached Table 3 (WQOs and WQCs).

b) *Methodology:* the RPA uses the methods and procedures prescribed in SIP Section 1.3. Board staff and the Discharger have analyzed the effluent data to determine if the discharge has reasonable potential for various pollutants. The attached Table 4 (Reasonable Potential Analysis), shows the step-wise process described in SIP Section 1.3.

2) *Effluent and background data*: The RPA is based on effluent data collected by the Discharger during the period January 1999 – December 2001, as shown in the attached Table 2 (Priority Pollutant Data). Water-quality data collected from San Francisco Bay at the Yerba Buena Island and Richardson Bay monitoring stations through the Regional Monitoring Program between 1992 and 1998 were reviewed to determine the maximum observed background values as shown the attached Table 5 (Ambient Background).

3) *RPA determination:* The RPA results for all pollutants analyzed are shown in Table B, below (and in the attached Table 4 (RPA)). For comparison, the previous Permit's effluent limitations for toxic pollutants are shown in Table D, below. Pollutants with reasonable potential were copper, lead, mercury, nickel, selenium, silver, zinc, cyanide, 4,4-DDE and dieldrin.

Table B. Summary of Reasonable Potential Results

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Maximum Background (µg/L)	Governing WQO (ug/L)	RPA Results[2]
2	Arsenic	**6.9**	2.46	36	No
4	Cadmium	**1**	0.127	9.3	No
5b	Chromium	**7.1**	4.4	50	No
6	Copper	**24**	2.455	3.7	Yes
7	Lead	**5.7**	0.804	5.6	Yes
8	Mercury	**0.014**	0.006	0.025	Yes
9	Nickel	**17**	3.5	7.1	Yes
10	Selenium	**5**	0.39	5	Yes
11	Silver	**14**	0.068	2.24	Yes
13	Zinc	**74**	4.6	58	Yes
14	Cyanide	**5**	N/A	1	Yes
16	2,3,7,8-TCDD (Dioxin)	Ind.	N/A	1.4E-08	Ib,
17	Acrolein	Ind.	N/A	780	Ib,
18	Acrylonitrile	Ind.		0.66	Ib,

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Maximum Background (µg/L)	Governing WQO (ug/L)	RPA Results[2]
19	Benzene	Ind.	N/A	71	Ib,
20	Bromoform	Ind.		360	Ib,
21	Carbon Tetrachloride	Ind.		4.4	Ib,
22	Chlorobenzene	Ind.		21000	Ib,
23	Chlordibromomethane	Ind.		34	Ib,
24	Chloroethane	Ind.		N.Obj.	Ib, Io,
25	2-Chloroethylvinyl Ether	Ind.		N.Obj.	Ib, Io,
26	Chloroform	Ind.	N/A	130	Ib,
27	Dichlorobromomethane	Ind.		46	Ib,
28	1,1-Dichloroethane	Ind.		N.Obj.	Ib, Io,
29	1,2-Dichloroethane	Ind.		99	Ib,
30	1,1-Dichloroethylene	Ind.		3.2	Ib,
31	1,2-Dichloropropane	Ind.		39	Ib,
32	1,3-Dichloropropylene	Ind.		1700	Ib,
33	Ethylbenzene	Ind.		29000	Ib,
34	Methyl Bromide	Ind.		4000	Ib,
35	Methyl Chloride	Ind.	N/A	N.Obj.	Ib, Io,
36	Methylene Chloride	Ind.		1600	Ib,
37	1,1,2,2-Tetrachloroethane	Ind.		11	Ib,
38	Tetrachloroethylene	Ind.		8.85	Ib,
39	Toluene	Ind.	N/A	200000	Ib,
40	1,2-Trans-Dichloroethylene	Ind.		140000	Ib,
41	1,1,1-Trichloroethane	Ind.		N.Obj.	Ib, Io,
42	1,1,2-Trichloroethane	Ind.		42	Ib,
43	Trichloroethylene	Ind.		81	Ib,
44	Vinyl Chloride	Ind.		525	Ib,
45	2-Chlorophenol	Ind.	N/A	400	Ib,
46	2,4-Dichlorophenol	Ind.	N/A	790	Ib,
47	2,4-Dimethylphenol	Ind.	N/A	2300	Ib,
48	2-Methyl-4,6-Dinitrophenol	Ind.	N/A	765	Ib,
49	2,4-Dinitrophenol	Ind.	N/A	14000	Ib,
50	2-Nitrophenol	Ind.	N/A	N.Obj.	Ib, Io,
51	4-Nitrophenol	Ind.	N/A	N.Obj.	Ib, Io,
52	3-Methyl-4-Chlorophenol	Ind.	N/A	N.Obj.	Ib, Io,
53	Pentachlorophenol	Ind.	N/A	7.9	Ib,
54	Phenol	**71**	N/A	500	Ib,
55	2,4,6-Trichlorophenol	Ind.	N/A	6.5	Ib,
56	Acenaphthene	0.17	0.0015	2700	No
57	Acenephthylene	0.2	0.00053	N.Obj.	Io,
58	Anthracene	0.02	0.0005	110000	No
59	Benzidine	0	N/A	0.00054	Ib,
60	Benzo(a)Anthracene	0.001	0.0053	0.049	No
61	Benzo(a)Pyrene	0.006	0.000287	0.049	No
62	Benzo(b)Fluoranthene	0.006	0.0046	0.049	No
63	Benzo(ghi)Perylene	0.006	0.0027	N.Obj.	Io,

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Maximum Background (µg/L)	Governing WQO (ug/L)	RPA Results[2]
64	Benzo(k)Fluoranthene	0.004	0.0015	0.049	No
65	Bis(2-Chloroethoxy)Methane	0	N/A	N.Obj.	Ib, Io,
66	Bis(2-Chloroethyl)Ether	0	N/A	1.4	Ib,
67	Bis(2-Chloroisopropyl)Ether	0	N/A	170000	Ib,
68	Bis(2-Ethylhexyl)Phthalate	0	N/A	5.9	Ib,
69	4-Bromophenyl Phenyl Ether	0	N/A	N.Obj.	Ib, Io,
70	Butylbenzyl Phthalate	0	N/A	5200	Ib,
71	2-Chloronaphthalene	0	N/A	4300	Ib,
72	4-Chlorophenyl Phenyl Ether	0	0.0024	N.Obj.	Io,
73	Chrysene	0.003	0.00064	0.049	No
74	Dibenzo(a,h)Anthracene	0.011	0.0006	0.049	No
75	1,2 Dichlorobenzene	0	N/A	17000	Ib,
76	1,3 Dichlorobenzene	0	N/A	2600	Ib,
77	1,4 Dichlorobenzene	0	N/A	2600	Ib,
78	3,31-Dichlorobenzidine	0	N/A	0.077	Ib,
79	Diethyl Phthalate	0	N/A	120000	Ib,
80	Dimethyl Phthalate	0	N/A	2900000	Ib,
81	Di-n-Butyl Phthalate	0	N/A	12000	Ib,
82	2,4-Dinitrotoluene	0	N/A	9.1	Ib,
83	2,6-Dinitrotoluene	0	N/A	N.Obj.	Ib, Io,
84	Di-n-Octyl Phthalate	0	N/A	N.Obj.	Ib, Io,
85	1,2-Diphenylhydrazine	0	N/A	0.54	Ib,
86	Fluoranthene	0.011	0.007	370	No
87	Fluorene	0.02	0.002078	14000	No
88	Hexachlorobenzene	0	0.00002	0.00077	No
89	Hexachlorobutadiene	0	N/A	50	Ib,
90	Hexachlorocyclopentadiene	0	N/A	17000	Ib,
91	Hexachloroethane	0	N/A	8.9	Ib,
92	Indeno(1,2,3-cd) Pyrene	0.004	0.004	0.049	No
93	Isophorone	0	N/A	600	Ib,
94	naphthalene	0.11	0.00229	N.Obj.	Io,
95	Nitrobenzene	0	N/A	1900	Ib,
96	N-Nitrosodimethylamine	0	N/A	8.1	Ib,
97	N-Nitrosodi-n-Propylamine	0	N/A	1.4	Ib,
98	N-Nitrosodiphenylamine	0	N/A	16	Ib,
99	Phenanthrene	0.02	0.0061	N.Obj.	Io,
100	Pyrene	0.02	0.019	11000	No
101	1,2,4-Trichlorobenzene	Ind.	N/A	N.Obj.	Ib, Io,
102	Aldrin	Ind.	N/A	0.00014	Ib,
103	alpha-BHC	Ind.	0.000496	0.013	No
104	beta-BHC	Ind.	0.000413	0.046	No
105	gamma-BHC	Ind.	0.000703	0.063	No

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL[1] (µg/L)	Maximum Background (µg/L)	Governing WQO (ug/L)	RPA Results[2]
106	delta-BHC	Ind.	0.000053	N.Obj.	Io,
107	Chlordane	Ind.	0.00018	0.00059	No
108	4,4-DDT	Ind.	0.00017	0.00059	No
109	4,4-DDE	Ind.	0.00069	0.00059	Yes
110	4,4-DDD	Ind.	0.000313	0.00084	No
111	Dieldrin	Ind.	0.000264	0.00014	Yes
112	alpha-Endosulfan	Ind.	0.000031	0.0087	No
113	beta-Endosulfan	Ind.	0.000069	0.0087	No
114	Endosulfan Sulfate	Ind.	0.000011	240	No
115	Endrin	Ind.	0.000016	0.0023	No
116	Endrin Aldehyde	Ind.	N/A	0.81	Ib,
117	Heptachlor	Ind.	0.000008	0.00021	No
118	Heptchlor Epoxide	Ind.	0.000094	0.00011	No
119 - 125	PCBs	Ind.	N/A	0.00017	Ib,
126	Toxaphene	Ind.	N/A	0.0002	Ib,
	Tributyltin	Ind.	N/A	0.01	Ib,
	Chlorpyrifos	Ind.	N/A	0.0056	Ib,
	Diazinon	Ind.	N/A	0.6	Ib,

Footnotes for Table B.

1) Maximum Effluent Concentration (MEC) in bold is the actual detected MEC, otherwise the MEC shown is the minimum detection level (if any reported DLs < WQO).

   NA = Not Available (there is no monitoring data for this constituent).

2) RP =Yes, if either MEC or Background > WQO.
   RP = No, if both MEC and background < WQO.
   RP = Id, undetermined due to lack of effluent monitoring data.
   RP = Ib, undetermined due to lack of background data if MEC < WQO and background is not available.
   RP = Idl, undetermined due to high detection levels
   RP = Uo, undetermined if no objective promulgated.

Table C. Polynuclear Aromatic Hydrocarbons

CTR Number	Constituent	WQO[1], µg/L	Maximum DL[2], µg/L	Background, µg/L	RP[3]
60	Benzo(a)Anthracene	0.049	1	0.0053	U
61	Benzo(a)Pyrene	0.049	1	0.0025	U
62	Benzo(b)Fluoranthene	0.049	1	0.0046	U
64	Benzo(k)Fluoranthene	0.049	1	0.0015	U
73	Chrysene	0.049	1	0.0041	U
74	Dibenzo(a,h)Anthracene	0.049	1	0.0006	U
92	Indeno(1,2,3-cd) Pyrene	0.049	1	0.004	U

Footnotes for Table C:

1. WQO based on the numeric WQO for protection of human health through consumption of organisms only.

2. No quantified data for individual PAH compounds during the period January 1999 – December 2001. Most detection limits above the WQOs for individual PAH compounds.

3. U = Undetermined. All RPA results for individual PAH compounds are undetermined due to inadequate data, with most detection limits above WQOs for individual PAH compounds. Discharger will continue monitoring with lowered detection limits pursuant to requirements of Board's August 6, 2001 letter and Board staff will complete RPA when adequate data are available.

Table D. Previous Permit Limits for Toxic Pollutants

Constituent CTR #	Constituent Name	Monthly Average, µg/L	Daily Average, µg/L
2	Arsenic	---	200
4	Cadmium	---	30
5b	Chromium (VI)	---	110
6	Copper	---	37
7	Lead	---	53
8	Mercury	0.21	1
9	Nickel	---	65
10	Selenium	---	50
11	Silver	---	23
13	Zinc	---	580
14	Cyanide	---	25
	PAHs	0.31	---
	Phenols		500

a) *Organic constituents with limited data*: Reasonable potential could not be determined for a majority of the organic priority or toxic pollutants due to

- applicable WQOs or WQCs are lower than current analytical techniques can measure; or
- applicable WQOs or WQCs are absent, or
- background data are inadequate.

b) *Pollutant Monitoring.* As required by the Board's August 6, 2001 letter, the Discharger is required to initiate or continue to monitor for those pollutants with limited data using analytical methods that provide the best detection limits reasonably feasible. If detection limits improve such that it becomes feasible to evaluate compliance with applicable water quality criteria, these pollutants' RPAs will be reevaluated in the future to determine whether numeric effluent limits need to be added to the permit or if monitoring should be continued.

c) *Pollutants with no reasonable potential:* The Order does not contain WQBELs for constituents that do not have reasonable potential. However, monitoring for those pollutants is still required, as specified in the Order's Self-Monitoring Program and the Board's August 6, 2001 letter formally requiring (pursuant to Section 13267 of the California Water Code) the Discharger to conduct ambient background monitoring for those constituents not currently sampled by the RMP, and to provide

this technical information to the Board. If data indicate the concentrations or mass loads of these constituents have increased significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures will be required if the increases pose a threat to the receiving water's quality.

d) *Permit Reopener:* The permit includes a reopener provision to allow adding numeric effluent limits for any constituent that in the future exhibits reasonable potential. That determination will be made by the Board, based on monitoring results.

4) *Basis For 10:1 Dilution Credit - Board staff believes a conservative limit of 10:1 dilution credit for discharges to the Bay is necessary for protection of beneficial uses. The basis for limiting the dilution credit is based on SIP provisions in Section 1.4.2. The following outlines the basis for derivation of the dilution credit:*

a. A far-field background station is appropriate because the receiving waterbody (Bay) is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs.

b. Due to the complex hydrology of the San Francisco Bay, a mixing zone cannot be accurately established.

c. Previous dilution studies do not fully account for the cumulative effects of other wastewater discharges to the system.

d. The SIP allows limiting a mixing zone and dilution credit for persistent pollutants (e.g., copper, silver, nickel and lead).

The main justification for using a 10:1 dilution credit is uncertainty in accurately determining ambient background and uncertainty in accurately determining the mixing zone in a complex estuarine system with multiple wastewater discharges.

a. **Complex Estuarine System Necessitates Far-Field Background** - The SIP allows background to be determined on a discharge-by-discharge or water body-by-water body basis (SIP section 1.4.3). Consistent with the SIP, Board staff has chosen to use a water body-by-water body basis because of the uncertainties inherent in accurately characterizing ambient background in a complex estuarine system on a discharge-by-discharge basis.

With this in mind, the Yerba Buena Island and Richardson Bay Stations fit the guidance for ambient background in the SIP compared to other stations in the Regional Monitoring Program. The SIP states that background data are applicable if they are "representative of the ambient receiving water column that will mix with the discharge." Board Staff believe that data from these stations are representative of water that will mix with the discharge from Outfall 001. Although these stations are located near the Golden Gate, they would represent the typical water flushing in and out in the Bay Area each tidal cycle. For most of the Bay Area, the waters represented by these stations make up a large part of the receiving water that will mix with the discharge.

b. **Uncertainties Prevent Accurate Mixing Zones in Complex Estuarine Systems** - There are uncertainties in accurately determining the mixing zones for each discharge. The models that have been used by dischargers to predict dilution have not considered the three-dimensional nature of the currents in the estuary resulting from the interaction of tidal flushes and seasonal fresh water outflows. Salt water is heavier than fresh water. Colder salt water from the ocean flushes in twice a day generally under the warmer fresh rivers waters that flows out annually. When these waters mix and interact, complex circulation patterns occur due to the different densities of these waters. These complex patterns occur throughout the estuary but are most prevalent in the San Pablo Bay, Carquinez Strait, and Suisun Bay areas. The locations change depending on the strength of each tide and the variable rate of delta outflow. Additionally, sediment loads to the Bay from the Central Valley also change on a longer-term basis. These changes can result in changes to the depths of different parts of the Bay making some areas more shallow and/or other areas more deep. These changes affect flow patterns that in turn can affect the initial dilution achieved by a discharger's diffuser.

c. **Dye studies do not account for cumulative effects from other discharges** - The tracer and dye studies conducted are often not long enough in duration to fully assess the long residence time of a portion of the discharge that is not flushed out of the system. In other words, some of the discharge, albeit a small portion, makes up part of the dilution water. So unless the dye studies are of long enough duration, the diluting effect on the dye measures only the initial dilution with "clean" dilution water rather than the actual dilution with "clean" dilution water plus some amount of original discharge that resides in the system. Furthermore, both models and dye studies that have been conducted have not considered the effects of discharges from other nearby discharge sources, nor the cumulative effect of discharges from over 20 other major dischargers to San Francisco Bay system. While it can be argued the effects from other discharges are accounted for by factoring in the local background concentration in calculating the limits, accurate characterization of local background levels are also subject to uncertainties resulting from the interaction of tidal flushing and seasonal fresh water outflows described above.

d. **Mixing Zone Is Further Limited for Persistent Pollutants** - Discharges to the Bay Area waters are not completely-mixed discharges as defined by the SIP. Thus, the dilution credit should be determined using site-specific information for incompletely-mixed discharges. The SIP in section 1.4.2.2 specifies that the Regional Board "significantly limit a mixing zone and dilution credit as necessary... For example, in determining the extent of ... a mixing zone or dilution credit, the RWQCB shall consider the presence of pollutants in the discharge that are ... persistent." The SIP defines persistent pollutants to be "substances for which degradation or decomposition in the environment is nonexistent or very slow." The pollutants at issue here are persistent pollutants (e.g., copper, lead, nickel). The dilution studies that estimate actual dilution do not address the effects of these persistent pollutants in the Bay environment, such as their long-term effects on sediment concentrations."

5) *Final Water Quality-Based Effluent Limits (WQBELs)* The final effluent limitations in the attached Table 6 (Final Limits Calculations) and in Table 4 of the Permit, are water quality-based. They were developed and set for the toxic and priority pollutants that were determined to have reasonable potential. Final effluent limitations were calculated

based on appropriate WQOs or WQCs, background concentrations at two Central Bay monitoring locations (Yerba Buena Island and Richardson Bay), a maximum dilution ratio of 10:1 (or D=9) for non-bioaccumulative pollutants, and the appropriate procedures specified in Section 1.4 of the SIP (see the attached Table 6 - Final Limits Calculations). The basis for the dilution credit is explained in section 4.j.i.(4), above. For the purpose of the Proposed Order, final WQBELs refer to all non-interim effluent limitations. The WQOs and WQCs used for each pollutant with RP is indicated in Table E, below, as well as in the attached Table 3 (WQOs and WQCs). Final WQBELs were not calculated for 4,4-DDE and dieldrin because there are no effluent data for those constituents. The Board's August 6, 2001 letter requires the Discharger to collect data on concentrations of 4,4-DDE and dieldrin in its effluent, and the Permit may be reopened at a later date to establish WQBELs for 4,4-DDE and dieldrin.

Table E. Water Quality Objectives/Criteria for Pollutants with RP

# in CTR	CONSTITUENT	Acute WQO/WQC, µg/L	Chronic WQO/WQC, µg/L	Basis
6	Copper	5.8	3.7	CTR
7	Lead	140	5.6	Basin Plan
8	Mercury	2.1	0.025	Basin Plan
9	Nickel	140	7.1	Basin Plan
10	Selenium	20	5	NTR
11	Silver	2.2		Basin Plan
13	Zinc	170	58	Basin Plan
14	Cyanide	1	1	NTR

6) *Interim Limits:*

a) *Statistical Feasibility Analysis.* The Discharger's May 13, 2002 Feasibility Study asserted that it was infeasible to immediately attain compliance with the final WQBELs for copper, mercury, selenium, and silver. Board staff performed statistical analysis of effluent data from January 1999 – December 2001 to independently assess the feasibility of immediately attaining the final WQBELs for these four constituents (statistical feasibility analysis). The statistical feasibility analysis consisted of the following steps:

- Using standard statistical software (MiniTab™), evaluate the probable shape of the data distribution for effluent sample data from the period January 1999 to December 2001 (normal, log-normal or ln-normal).

- Calculate the 95th and 99th percentiles of effluent data distribution for each constituent considered for the period January 1999 to December 2001.

- Compare the 95th and 99th percentile values with the Average Monthly Effluent Limit (AMEL) and Maximum Daily Effluent Limit (MDEL), respectively. According to Table 2 (Page 9 of the SIP), the AMEL and MDEL should correspond with the 95th and 99th percentile values, respectively, of plant performance.

- Where the 95th and 99th percentile values are greater than the AMEL and MDEL, respectively, it is assumed that the overall data distribution of the actual effluent data is higher than the assumed data distribution used to generate the AMEL and MDEL, and that immediate compliance with the AMEL and MDEL is infeasible.

- Where the 95th and 99th percentile values are not greater than the AMEL and MDEL, respectively, it is assumed that infeasibility of immediate compliance with the AMEL and MDEL is not demonstrated and the AMEL and MDEL can be immediately attained.

- Where the 95th and 99th percentile values cannot be estimated due to too few data (copper and silver), the determination was based on Staff's BPJ after examining the raw data.

For copper, Board staff concurred that immediate attainment was infeasible, based on comparison of the 95th percentile of the data to the AMEL (22 µg/L vs. 13 µg/L, respectively). For silver, Board Staff did not concur that immediate attainment was infeasible, based on comparison of the MEC to the MDEL (14 µg/L vs. 22 µg/L, respectively).

The results of the statistical feasibility analysis are depicted in Table F, below.

Table F. Results of statistical feasibility analysis.

Constituent	Predicted Data Distribution	95th percentile value, µg/L	AMEL, µg/L	99th percentile value, µg/L	MDEL, µg/L	Immediate attainment feasible?
Copper	ln-normal	22.3	13	[1]	23.6	No
Mercury		[2]	0.025	[2]	0.046	No
Selenium		[3]	2.5	[3]	5	No
Silver	ln-normal	[4]	21.8	[4]	10.9	Yes

Footnotes for Table F:

[1] Too few quantified copper data to estimate 99th percentile value

[2] Data distribution for mercury was not predicted because there were too few quantified data and the data set is mixed between nonultraclean and ultraclean data. Due to the higher detection limits for non-ultraclean data Board staff is concerned that immediate compliance with final limits is infeasible immediately.

[3] Existence of a single data point for selenium prevented statistical analysis of feasibility of attaining selenium data. Feasibility analysis based on comparison of single data value (5 µg/L) to the AMEL (2.5 µg/L), and assertion of infeasibility accepted. Feasibility may be reevaluated once adequate selenium data become available.

[4] Too few quantified copper effluent data to estimate 95th and 99th percentile values.

b) In this Order, an interim performance-based limit (IPBL) was derived for cyanide because adequate ambient background data to compute final WQBELs' for cyanide are not available. Section 2.2.1 of the SIP requires interim effluent concentration limitations to be based on either the existing limit or the recent plant performance, whichever is more stringent. This Permit continues the previous permit's cyanide

limitation of 25 µg/L as the interim limit, until the conclusion of the cyanide data-gathering period referenced in the Permit.

c) This Order also sets interim limits for copper, mercury, and selenium based on the Discharger's May 13, 2002 Feasibility Study, and the statistical feasibility analysis, which demonstrated that immediate compliance with the WQBELs for those pollutants is infeasible. The SIP requires interim limits to be either the previous permit's limit or an IPBL, whichever is more stringent, for each pollutant needing interim limits. During the period January 1999 – December 2001, there were 22 quantified copper detections out of 36 samples collected and 1 quantified selenium detection out of 17 samples collected. Statistical analysis of those data indicate it is impossible to calculate the 99.87th percentile values, and therefore IPBLs, for copper and selenium. Therefore, the interim limits for copper and selenium are based on the previous permit's limits for those metals – 37 µg/L and 50, respectively.

d) The interim limit for mercury is an IPBL based on a statistical analysis of pooled ultraclean mercury data for POTWs throughout the San Francisco Bay Region. The statistical analysis indicated that 0.087 µg/L is an appropriate IPBL for secondary treatment plants' mercury performance. The WWTP is a secondary treatment plant, so its mercury IPBL is 0.087 µg/L.

e) Finally, interim limits were not set for 4,4-DDE or dieldrin because there are no effluent data for those pollutants, and thus is it impossible to calculate IPBLs for them.

ii. Compliance Schedules

To qualify for a compliance schedule, both the SIP and the Basin Plan require that the Discharger demonstrate that it is infeasible to achieve immediate compliance with the new limit. The SIP and Basin Plan require that the following information be submitted to the Board to support a finding of infeasibility:

- Documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;

- Documentation of source control and/or pollution minimization efforts currently under way or completed;

- A proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and

The Discharger's May 13, 2002 Feasibility Study proposed appropriate source identification/reduction measures. The Board concurs that it is infeasible for the discharger to immediately comply with the WQBELs for copper, cyanide, mercury, and selenium (see Table F, above). Therefore, this Order establishes compliance schedules for these pollutants. The bases for the limits contained in this Permit are delineated in Table E , above:

- for limits based on CTR or NTR criteria (i.e., copper, selenium and cyanide) this Order establishes a five-year compliance schedule, as allowed by the CTR and SIP.

- for limits based on the Basin Plan numeric objectives (i.e., mercury), this Order establishes a compliance schedule until March 31, 2010. The Basin Plan provides for a 10-year compliance schedule for implementation of measures to comply with new standards as of the effective date of those standards. This provision has been construed to authorize compliance schedules for new interpretations of existing standards, such as the numeric water quality objectives specified in the Basin Plan, resulting in more stringent limits than in the previous permit. Due to the adoption of the SIP, the Board has newly interpreted these objectives. As a result of applying the SIP methodologies, the WQBELs for these pollutants are more stringent than the prior permit's. Accordingly, a compliance schedule is appropriate here for the new limits for these pollutants.

iii. Further Discussion and Rationale for Mercury Mass-Based Effluent Limitations

This Order includes an interim mercury mass-based effluent limitation of 0.018 kilograms per month. This mass-based effluent limitation is calculated as shown in the attached Table 7 (Mercury Mass Limit), and is based on facility flow and mercury concentration data collected during the period January 1999 – December 2001. This mass-based effluent limitation will maintain current mercury loadings to San Francisco Bay until a TMDL is established. The final mass -based effluent limitation will likely be based on the WLA contained in the mercury TMDL.

5. Basis for Receiving Water Limitations

a) Receiving water limitations C.1 and C.2 (conditions to be avoided): These limits are based on the previous Order and the narrative/numerical objectives contained in Chapters 2 and 3 of the Basin Plan

b) Receiving water limitation C.3 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

6. Basis for Self Monitoring Program Requirements

The SMP includes monitoring for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. For the most part, the monitoring is the same as required by the previous Order. The TSS and BOD influent and effluentmonitoring frequencies for the WWTP are three times per week for TSS and weekly for BOD because the Board believes that these levels of performance monitoring are appropriate for this municipal treatment facility. Current knowledge indicates that TSS is a better indicator of proper functioning for solids removal than settleable solids and therefore, based on Board staff's best professional judgement, settleable matter monitoring is reduced from weekly in the previous permit to monthly in this one. In addition, the influent BOD and TSS monitoring frequencies are now consistent with effluent monitoring for these parameters. This will allow better evaluation of percent removal efficiency. Monthly metals, mercury, and cyanide monitoring is consistent with the previous order. Monitoring for other priority pollutants will take place pursuant to the conditions and requirements of the Board's August 6, 2001 letter.

7. Basis for Sludge Management Practices

These requirements are based on Table 4.1 of the Basin Plan, and 40 CFR 503.

8. Basis for Provisions

a) Provisions 1. (Permit compliance and rescission of previous permit): Time of compliance is based on 40 CFR 122. The basis of the order superseding and rescinding the previous permit order is 40 CFR 122.46.

b) Provision 2. (Cyanide Study and Schedule): This provision, based on SIP Section 1.2 ("Data Requirements and Adjustments") and SIP Section 5.2 ("Site-Specific Objectives"), requires the Discharger to characterize background ambient cyanide concentrations and to participate in developing a site-specific objective for cyanide.

c) Provision 3. (Effluent Characterization Study): This provision is based on the SIP.

d) Provision 4. (Ambient Background Receiving Water Study): This provision is based on the Basin Plan and the SIP.

e) Provision 5. (Pollutant Prevention and Pollutant Minimization Program): This provision is based on the Basin Plan (pp. 4 – 25 and 4 – 26) and the SIP (section 2.1, Compliance Schedule).

f) Provision 6. (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limits for acute toxicity will be demonstrated. Conditions include the use of 96-hour bioassays, flow-through bioassays for discharges to Central San Francisco Bay, the use of fathead minnows and three-spine stickleback as the test species, and use of approved test methods as specified. On September 1, 2003, the Discharger shall change from 3rd to 4th Edition U.S. EPA protocols. These conditions are based on the effluent limits for acute toxicity given in the Basin Plan, Chapter 4, and BPJ.

g) Provision 7. (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocol by which compliance with the Basin Plan narrative water quality objective for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as triggers for initiating accelerated monitoring and toxicity reduction evaluation(s). These conditions apply to the discharges to Central San Francisco Bay and the numerical values for chronic toxicity evaluation are based on a minimum initial dilution ratio of 10:1. This provision also requires the Discharger to meet a screening phase monitoring requirement and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. New testing species and/or test methodology may be available before the next permit renewal. Characteristics, and thus toxicity, of the process wastewater may change during the life of the Permit. This screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the draft permit for chronic toxicity are based on the Basin Plan narrative water quality objective for toxicity, Basin Plan effluent limits for chronic toxicity (Basin Plan, Chapter 4), U.S. EPA and SWRCB Task Force guidance, applicable federal regulations (40 CFR 122.44(d)(1)(v)), and BPJ.

h) Provision 8. (Facility Operations during Wet Weather Conditions): The purpose of these provisions is to ensure that the wastewater collection system and treatment facilities are operated in a manner to provide optimal control and treatment of wastewater during wet weather conditions. They are based on BPJ and the Basin Plan.

i) Provisions 9. (Regional Monitoring Program): This provision, which requires the Discharger to continue participating in the Regional Monitoring Program, is based on the previous Order and the Basin Plan.

j) Provision 10. (Optional Mass Offset): This option is provided to encourage the Discharger to implement aggressive reduction of mass loads to Central San Francisco Bay.

k) Provision 11. (Copper and Nickel Translator Study): This provision allows the Discharger to conduct optional copper and/or nickel translator studies, and is based on SIP Section 1.4 ("Translator for Metals and Selenium") and BPJ. This provision acknowledges the need to gather site-specific information in order to apply different translators than the default translators specified in the CTR and SIP. Without site-specific data, the default copper translator of 0.83 has been used with the CTR criteria to obtain a total copper objective of 3.7 µg/L.

l) Provision 12. (Wastewater Facilities, Review and Evaluation, and Status Reports): These provisions are based on the previous Order and the Basin Plan.

m) Provision 13. (Operations and Maintenance Manual, Review and Status Reports): These provisions are based on the Basin Plan, requirements of 40 CFR 122 and the previous permit.

n) Provision 14. (Contingency Plan). The Contingency Plan provision is based on the requirements stipulated in Board Resolution No. 74-10 and the previous permit.

o) Provision 15. (Annual Status Reports): The Annual Status Reports are based on the previous permit and the Basin Plan.

p) Provisions 16. (303(d)-listed Pollutants Site-Specific Objective and TMDL Status Review): This provision requires participation in the development of a TMDL or site-specific objective for copper, mercury, nickel, and selenium. By January 31 of each year, the Discharger shall submit an update to the Board to document progress made on source control and pollutant minimization measures and development of TMDL or site-specific objective. Board staff shall review the status of TMDL development. The order may be reopened in the future to reflect any changes required by TMDL development.

q) Provision 17. (New Water Quality Objectives): This provision allows future modification of the permit and permit effluent limits as necessary in response to updated water quality objectives that may be established in the future. This provision is based on 40 CFR 123.

r) Provision 18. (Self-Monitoring Program Requirement): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP, and is based on 40 CFR 122.44(i), 122.62, 122.63 and 124.5. The SMP is a standard requirement in almost all NPDES permits issued by the Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board's policies. The SMP also contains a sampling program specific for the WWTP. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are

specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

s) Provision 19. (Standard Provisions and Reporting Requirements): The purpose of this provision is require compliance with the standard provisions and reporting requirements given in this Board's document titled *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions), or any amendments thereafter. That document is incorporated in the permit as an attachment to it. Where provisions or reporting requirements specified in the permit are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the permit specifications shall apply. The standard provisions and reporting requirements given in the above document are based on various state and federal regulations with specific references cited therein.

t) Provision 20, 21. (Change in Control or Ownership): These provisions are based on 40 CFR 122.61.

u) Provisions 22. (Permit Reopener): This provision is based on 40 CFR 123.

v) Provision 23. (NPDES Permit and U.S. EPA concurrence): This provision is based on 40 CFR 123.

w) Provision 24, 25. (Permit Expiration and Reapplication): These provisions are based on 40 CFR 122.46 (a).

VI. WRITTEN COMMENTS

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments should be submitted to the Board no later than **5:00 P.M.** on **July 20, 2002.**
- Comments received after that date may not receive full consideration in the formulation of final determinations of permit conditions.
- Comments should be submitted to the Board at the address given on the first page of this fact sheet, and addressed to the attention of **Ken Katen**.

VII. PUBLIC HEARING

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting to be held on: September 18, 2002, starting at 9:00 a.m.
- This meeting will be held at:

Main Floor Auditorium
Elihu Harris State Office Building
1515 Clay Street, Oakland, California

VIII. WASTE DISCHARGE REQUIREMENT APPEALS

Any person may petition the State Water Resources Control Board to review the decision of the Board regarding these Waste Discharge Requirements. A petition must be made within 30 days of the Board public hearing.

IX. ADDITIONAL INFORMATION

For additional information about this matter, interested persons should contact Board staff member **Ken Katen at (510) 622-2431, email: kk@rb2.swrcb.ca.gov.**

X. ATTACHED TABLES

Table 1 – Discharger's Effluent Data for Conventional Parameters
Table 2 – Discharger's Effluent Data for Priority Pollutants
Table 3 – Basin Plan Water Quality Objectives and CTR Water Quality Criteria.
Table 4 – Reasonable Potential Analysis
Table 5 – Ambient Background Data for RPA and Limit Calculations.
Table 6 – Final Limit Calculations Using SIP Procedures.
Table 7 – Interim Mercury Mass-Based Limit Calculations
Table 8 – Salinity Data
Table 9 – Basis for compliance schedule time frames.

PARAMETER	LIMIT	Jan-99	Feb-99	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99
Monitoring Point E-001										
Temperature Eff Daily Maximum C	NA	20.5	19.7	20.3	19.4	19.5	20.3	21	21.8	21
Flow Eff Monthly Total Mgal	NA	26.066	34.905	25.312	23.812	20.467	19.618	20.606	19.707	19.252
Flow Eff Daily Average mgd	NA	0.841	1.247	0.817	0.794	0.66	0.654	0.665	0.636	0.642
Flow Eff Daily Maximum mgd	NA	1.434	2.878	0.991	1.363	0.711	0.711	0.753	0.703	0.701
Flow Eff Daily Minimum mgd	NA	0.583	0.757	0.739	0.643	0.603	0.61	0.622	0.585	0.603
BOD 5 Day Inf Monthly Average mg/l	NA	195	95.5	138	150	175	178	157.5	140	150
BOD 5 Day Eff Monthly Average mg/l	Max 30	18.3	17.5	8.2	11	7.5	7.8	9	8.5	11.2
BOD 5 Day Eff Monthly Removal % (Avera	Min 85	90.82	62.87	93.91	93.74	95.48	95.5	94.2	94.05	92.41
Total Suspended Solids Inf Monthly Average	NA	215	105.5	134	100	117.5	134	135	139	146
Total Suspended Solids Eff Monthly Average	Max 30	9	15.5	5.1	8.4	3.88	4.4	5.3	3.6	7.2
Total Suspended Solids Eff Monthly Remova	Min 85	95.71	76.13	96.12	93.4	96.6	96.66	95.28	96.62	94.4
pH Eff Grab Maximum unit	Max 9	7.54	7.35	7.3	7.37	7.34	7.41	7.51	7.36	7.45
pH Eff Grab Minimum unit	Min 6	7.09	7.01	7.06	7.11	7.04	7.04	7.07	6.99	7.05
Chlorine Residual Eff Instant Maximum mg/l	Max 0	0	0	0	0	0	0	0	0	0
Turbidity Eff Monthly Average, NTU	NA	21.45	29.79	13	19.11	14.18	13.73	11.47	12.17	12.5
Total Coliform Eff Daily Maximum mpn/100	Max 2400	170	170	350	540	350	70	240	17	33
Total Coliform Eff 5Samp MovingMed mpn/	Max 240	7	7	79	79	79	49	49	17	5
Oil and Grease Eff Monthly Average mg/l	NA		<5		<5			<5		

PARAMETER	LIMIT	Oct-99	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00
Monitoring Point E-001										
Temperature Eff Daily Maximum C	NA	21.7	20.5	19.9	20.8	20.4	20.6	19.9	21.8	22
Flow Eff Monthly Total Mgal	NA	20.585	20.686	21.107	27.326	37.592	28.118	22.658	22.83	21.227
Flow Eff Daily Average mgd	NA	0.664	0.69	0.681	0.943	1.296	0.907	0.755	0.736	0.708
Flow Eff Daily Maximum mgd	NA	0.857	0.853	0.775	2.956	3.977	1.439	0.95	0.899	0.791
Flow Eff Daily Minimum mgd	NA	0.431	0.566	0.606	0.657	0.747	0.702	0.666	0.657	0.654
BOD 5 Day Inf Monthly Average mg/l	NA	152.5	187.5	170	124	140.5	202	180	162	187.5
BOD 5 Day Eff Monthly Average mg/l	Max 30	10.3	29.8	9.6	9.5	17	9.8	9	12.6	13.6
BOD 5 Day Eff Monthly Removal % (Avera	Min 85	93.24	83.56	94.23	91.79	83.77	93.85	94.82	92.32	93.06
Total Suspended Solids Inf Monthly Average	NA	170	160	162	181	162.5	254	205	136	117.8
Total Suspended Solids Eff Monthly Average	Max 30	3.6	12.8	5	5.8	11	6.2	9.5	2.9	4
Total Suspended Solids Eff Monthly Remova	Min 85	97.73	91.42	96.76	95.18	93.86	96.82	94.72	97.62	96.09
pH Eff Grab Maximum unit	Max 9	7.31	7.47	7.45	7.51	7.44	7.47	7.46	7.45	7.61
pH Eff Grab Minimum unit	Min 6	7.08	7.03	7.06	7.01	6.78	6.88	6.89	6.85	6.89
Chlorine Residual Eff Instant Maximum mg/l	Max 0	0	0	0	0	0	0	0	0	0
Turbidity Eff Monthly Average, NTU	NA	11.5	26.7	12.69	14.5	34.53	158.84	41.92		8.96
Total Coliform Eff Daily Maximum mpn/100	Max 2400	31	14	130	240	280	1660	33	49	130
Total Coliform Eff 5Samp MovingMed mpn/	Max 240	5	13	23	33	110	110	13	33	23
Oil and Grease Eff Monthly Average mg/l	NA				6.83		<5			

PARAMETER	LIMIT	Jul-00	Aug-00	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01
Monitoring Point E-001										
Temperature Eff Daily Maximum C	NA	21.2	21.1	21.5	21.4	19.6	19.1	18.4	19.9	20.9
Flow Eff Monthly Total Mgal	NA	20.862	19.994	19.212	19.699	17.973	18.876	21.602	28.276	24.246
Flow Eff Daily Average mgd	NA	0.673	0.645	0.64	0.635	0.599	0.609	0.697	1.01	0.782
Flow Eff Daily Maximum mgd	NA	0.747	0.695	0.696	0.8	0.683	0.777	1.117	2.074	1.065
Flow Eff Daily Minimum mgd	NA	0.621	0.543	0.588	0.574	0.528	0.493	0.528	0.611	0.632
BOD 5 Day Inf Monthly Average mg/l	NA	213.75	206	190	195	198	230	206	220	252.6
BOD 5 Day Eff Monthly Average mg/l	Max 30	24.5	18.6	25.5	33	27.4	14.8	11.1	10.6	5.5
BOD 5 Day Eff Monthly Removal % (Averag	Min 85	87.7	91.41	86.78	82.74	85.99	93.47	94.19	95.13	97.76
Total Suspended Solids Inf Monthly Average	NA	132.5	134.2	160	192.5	118.8	157.5	170	148.31	173.8
Total Suspended Solids Eff Monthly Average	Max 30	4	3.7	7.38	11.3	7.7	6.6	14.69	5.8	5.1
Total Suspended Solids Eff Monthly Remova	Min 85	96.95	96.81	95.18	93.76	93.32	95.41	96.49	94.97	96.56
pH Eff Grab Maximum unit	Max 9	7.38	7.38	7.41	7.24	7.34	7.3	7.54	7.5	7.36
pH Eff Grab Minimum unit	Min 6	6.93	6.76	6.95	6.99	6.78	6.73	6.87	7.09	7.02
Chlorine Residual Eff Instant Maximum mg/l	Max 0	0	0	0	0	0	0	0	0	0
Turbidity Eff Monthly Average, NTU	NA	5.62	15.2	11.23	12.9	12.45	8.54	11.2	18.36	9.3
Total Coliform Eff Daily Maximum mpn/100	Max 2400	49	79	49	79	49	46	50	130	14
Total Coliform Eff 5Samp MovingMed mpn/	Max 240	23	23	49	33	22	23	2	2	50
Oil and Grease Eff Monthly Average mg/l	NA	<5			<5			5		

PARAMETER	LIMIT	Apr-01	May-01	Jun-01	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01
Monitoring Point E-001										
Temperature Eff Daily Maximum C	NA	20	21	21.7	21.3	21.7	21.5	20.8	19.7	19.6
Flow Eff Monthly Total Mgal	NA	21.082	20.414	18.639	18.751	18.94	18.126	19.026	22.498	34.342
Flow Eff Daily Average mgd	NA	0.703	0.659	0.621	0.605	0.611	0.604	0.614	0.75	1.108
Flow Eff Daily Maximum mgd	NA	0.788	0.75	0.744	0.691	0.674	0.682	0.728	1.521	2.543
Flow Eff Daily Minimum mgd	NA	0.569	0.554	0.531	0.497	0.522	0.524	0.56	0.547	0.644
BOD 5 Day Inf Monthly Average mg/l	NA	207.5	212	272	272.5	268	255	238	205	225
BOD 5 Day Eff Monthly Average mg/l	Max 30	4.4	10.8	8.2	15.7	17.8	9.9	5.5	5.7	6.7
BOD 5 Day Eff Monthly Removal % (Avera	Min 85	97.61	94.66	97.03	94.11	90.89	95.53	97.46	97.22	97.11
Total Suspended Solids Inf Monthly Average	NA	150	118.4	170	202.5	248	207.5	170	177.5	187.5
Total Suspended Solids Eff Monthly Average	Max 30	4.4	15.35	7.9	18.3	26.7	15.4	7.7	12.5	9.8
Total Suspended Solids Eff Monthly Remova	Min 85	96.76	94.06	98.27	91.08	82.01	90.58	95.48	92.43	95.03
pH Eff Grab Maximum unit	Max 9	7.31	7.33	7.32	7.27	7.2	7.14	7.1	7.13	7.32
pH Eff Grab Minimum unit	Min 6	7.02	7	6.97	6.77	6.74	6.82	6.68	6.67	6.84
Chlorine Residual Eff Instant Maximum mg/l	Max 0	0		0	0	0	0	0	0	0
Turbidity Eff Monthly Average, NTU	NA	9.41	15.3	16.49	29.94	19.57	6.86	5.27	4.96	7.32
Total Coliform Eff Daily Maximum mpn/100	Max 2400	80	95	8	130	50	23	2	60	20
Total Coliform Eff 5Samp MovingMed mpn/	Max 240	23	80	13	4	17	8	8	2	22
Oil and Grease Eff Monthly Average mg/l	NA	5		<5			<5			

PARAMETER	LIMIT	
Monitoring Point E-001		
Temperature Eff Daily Maximum C	NA	
Flow Eff Monthly Total Mgal	NA	
Flow Eff Daily Average mgd	NA	0.74725
Flow Eff Daily Maximum mgd	NA	
Flow Eff Daily Minimum mgd	NA	
BOD 5 Day Inf Monthly Average mg/l	NA	
BOD 5 Day Eff Monthly Average mg/l	Max 30	
BOD 5 Day Eff Monthly Removal % (Avera	Min 85	
Total Suspended Solids Inf Monthly Average	NA	
Total Suspended Solids Eff Monthly Average	Max 30	
Total Suspended Solids Eff Monthly Remova	Min 85	
pH Eff Grab Maximum unit	Max 9	
pH Eff Grab Minimum unit	Min 6	
Chlorine Residual Eff Instant Maximum mg/l	Max 0	
Turbidity Eff Monthly Average, NTU	NA	
Total Coliform Eff Daily Maximum mpn/100	Max 2400	
Total Coliform Eff 5Samp MovingMed mpn/	Max 240	
Oil and Grease Eff Monthly Average mg/l	NA	

Note: Nondetected data are indicated by a "<" in the column to the left of the sampling data entry.
Blank cells indicate no data collected for that constituent that month.

# in CTR	CONSTITUENT	Jan-99	Feb-99	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99
2	Arsenic			3.7	2.1		<	2			<
4	Cadmium		<	1	< 1			1			<
5b	Chromium		<	2	3.2		<	2			<
6	Copper	7	7.3	21	8	7.5	7.5	7	6.5	8.3	8.3
7	Lead		<	2	< 2		<	2			<
	Lead for CV Calculation										
8	Mercury	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
9	Nickel		<	2	< 2		<	2			
10	Selenium		<	5	< 5		<	5			<
11	Silver		<	5	2.1			2.7			
13	Zinc			21	57			59			
14	Cyanide		<	5	< 5		<	5			<
16	2,3,7,8-TCDD (Dioxin)										
17	Acrolein										
18	Acrylonitrile										
19	Benzene										
20	Bromoform										
21	Carbon Tetrachloride										
22	Chlorobenzene										
23	Chlordibromomethane										
24	Chloroethane										
25	2-Chloroethylvinyl Ether										
26	Chloroform										
27	Dichlorobromomethane										
28	1,1-Dichloroethane										
29	1,2-Dichloroethane										
30	1,1-Dichloroethylene										
31	1,2-Dichloropropane										
32	1,3-Dichloropropylene										
33	Ethylbenzene										
34	Methyl Bromide										
35	Methyl Chloride										
36	Methylene Chloride										
37	1,1,2,2-Tetrachloroethane										
38	Tetrachloroethylene										
39	Toluene										
40	1,2-Trans-Dichloroethylene										
41	1,1,1-Trichloroethane										
42	1,1,2-Trichloroethane										
43	Trichloroethylene										

Note: Nondetected data are indicated by a "<"
Blank cells indicate no data collect

# in CTR	CONSTITUENT	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00
2	Arsenic	2	< 2					3.2	< 2		
4	Cadmium	1	< 1				< 1		< 1		
5b	Chromium	2		7.1			< 2			2.8	
6	Copper	10	6.5	6.5	7.5	8.8	11	11	11 <	10	22 <
7	Lead	2	< 2					5.7	< 2		
	Lead for CV Calculation										
8	Mercury	0.2 <	0.004	0.0065	0.004	0.0043	0.0064	0.0048	0.0029	0.0023	0.0036
9	Nickel	2.5	< 2				< 2			17	
10	Selenium	5	< 5				< 5		< 5		
11	Silver	0.3	< 0.2				< 0.2			4.5	
13	Zinc	35		3.8				74		18	
14	Cyanide	5	< 5				< 5			5	
16	2,3,7,8-TCDD (Dioxin)										
17	Acrolein										
18	Acrylonitrile										
19	Benzene										
20	Bromoform										
21	Carbon Tetrachloride										
22	Chlorobenzene										
23	Chlordibromomethane										
24	Chloroethane										
25	2-Chloroethylvinyl Ether										
26	Chloroform										
27	Dichlorobromomethane										
28	1,1-Dichloroethane										
29	1,2-Dichloroethane										
30	1,1-Dichloroethylene										
31	1,2-Dichloropropane										
32	1,3-Dichloropropylene										
33	Ethylbenzene										
34	Methyl Bromide										
35	Methyl Chloride										
36	Methylene Chloride										
37	1,1,2,2-Tetrachloroethane										
38	Tetrachloroethylene										
39	Toluene										
40	1,2-Trans-Dichloroethylene										
41	1,1,1-Trichloroethane										
42	1,1,2-Trichloroethane										
43	Trichloroethylene										

Note: Nondetected data are indicated by a "<"
Blank cells indicate no data collect

# in CTR	CONSTITUENT	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01
2	Arsenic		< 2			5.2			6.9		<
4	Cadmium		< 1					<	1		<
5b	Chromium		< 2			3.5		<	10		<
6	Copper	20	24	< 2	< 20	5.2	< 20	< 20	< 10	< 20	< 20
7	Lead			3.4		54		<	3		<
	Lead for CV Calculation										
8	Mercury	0.005	0.0044	0.0027	0.0075	0.0049	0.0075	0.0023	0.0025	0.00332	0.0034
9	Nickel			2.3		2.6		<	10		<
10	Selenium		< 5			5		<	1	< 1	<
11	Silver			14		4.1		<	1		<
13	Zinc			12		28			42		
14	Cyanide		< 5		< 5			<	5		
16	2,3,7,8-TCDD (Dioxin)										
17	Acrolein										
18	Acrylonitrile										
19	Benzene										
20	Bromoform										
21	Carbon Tetrachloride										
22	Chlorobenzene										
23	Chlordibromomethane										
24	Chloroethane										
25	2-Chloroethylvinyl Ether										
26	Chloroform										
27	Dichlorobromomethane										
28	1,1-Dichloroethane										
29	1,2-Dichloroethane										
30	1,1-Dichloroethylene										
31	1,2-Dichloropropane										
32	1,3-Dichloropropylene										
33	Ethylbenzene										
34	Methyl Bromide										
35	Methyl Chloride										
36	Methylene Chloride										
37	1,1,2,2-Tetrachloroethane										
38	Tetrachloroethylene										
39	Toluene										
40	1,2-Trans-Dichloroethylene										
41	1,1,1-Trichloroethane										
42	1,1,2-Trichloroethane										
43	Trichloroethylene										

Note: Nondetected data are indicated by a "<"											
	Blank cells indicate no data collect										
# in CTR	CONSTITUENT	Jul-01		Aug-01		Sep-01		Oct-01		Nov-01		Dec-01
2	Arsenic	2					<	2				
4	Cadmium	1					<	1				
5b	Chromium	2					<	1				
6	Copper	5.2	<	20	<	20	<	20	<	20	<	20
7	Lead	2					<	5				
	Lead for CV Calculation											
8	Mercury	0.014		0.0097		0.012		0.0034		0.004		0.005
9	Nickel	2					<	10				
10	Selenium	1	<	1	<	1	<	1	<	1	<	20
11	Silver	10					<	10				
13	Zinc	0.078					<	50				
14	Cyanide		<	5			<	5				
16	2,3,7,8-TCDD (Dioxin)											
17	Acrolein											
18	Acrylonitrile											
19	Benzene											
20	Bromoform											
21	Carbon Tetrachloride											
22	Chlorobenzene											
23	Chlordibromomethane											
24	Chloroethane											
25	2-Chloroethylvinyl Ether											
26	Chloroform											
27	Dichlorobromomethane											
28	1,1-Dichloroethane											
29	1,2-Dichloroethane											
30	1,1-Dichloroethylene											
31	1,2-Dichloropropane											
32	1,3-Dichloropropylene											
33	Ethylbenzene											
34	Methyl Bromide											
35	Methyl Chloride											
36	Methylene Chloride											
37	1,1,2,2-Tetrachloroethane											
38	Tetrachloroethylene											
39	Toluene											
40	1,2-Trans-Dichloroethylene											
41	1,1,1-Trichloroethane											
42	1,1,2-Trichloroethane											
43	Trichloroethylene											

Note: Nondetected data are indicated by a "<" in the column to the left of the sampling data entry.
Blank cells indicate no data collected for that constituent that month.

# in CTR	CONSTITUENT		Jan-99	Feb-99	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99
44	Vinyl Chloride											
45	2-Chlorophenol											
46	2,4-Dichlorophenol											
47	2,4-Dimethylphenol											
48	2-Methyl-4,6-Dinitrophenol											
49	2,4-Dinitrophenol											
50	2-Nitrophenol											
51	4-Nitrophenol											
52	3-Methyl-4-Chlorophenol											
53	Pentachlorophenol											
54	Phenol				< 50				< 50		71	
55	2,4,6-Trichlorophenol											
56	Acenaphthene	<	0.2			< 1			< 5			
57	Acenephthylene	<	0.2			< 1			< 2.5			
58	Anthracene	<	0.02			< 1			< 0.1			
59	Benzidine	<				< 1			<			
60	Benzo(a)Anthracene	<	0.02			< 1			< 0.25			
61	Benzo(a)Pyrene	<	0.02			< 1			< 0.25			
62	Benzo(b)Fluoranthene	<	0.02			< 1			< 0.1			
63	Benzo(ghi)Perylene	<	0.02			< 1			< 0.4			
64	Benzo(k)Fluoranthene	<	0.02			< 1			< 0.1			
65	Bis(2-Chloroethoxy)Methane	<	0.02			< 1			<			
66	Bis(2-Chloroethyl)Ether	<	0.02			< 1			<			
67	Bis(2-Chloroisopropyl)Ether	<	0.02			< 1			<			
68	Bis(2-Ethylhexyl)Phthalate	<	0.02			< 1			<			
69	4-Bromophenyl Phenyl Ether	<	0.02			< 1			<			
70	Butylbenzyl Phthalate	<	0.02			< 1			<			
71	2-Chloronaphthalene	<	0.02			< 1			<			
72	4-Chlorophenyl Phenyl Ether	<	0.02			< 1			<			
73	Chrysene	<	0.02			< 1			< 0.25			
74	Dibenzo(a,h)Anthracene	<	0.02			< 1			< 1			
75	1,2 Dichlorobenzene	<				< 1			<			
76	1,3 Dichlorobenzene	<				< 1			<			
77	1,4 Dichlorobenzene	<				< 1			<			
78	3,31-Dichlorobenzidine	<				< 1			<			
79	Diethyl Phthalate	<				< 1			<			
80	Dimethyl Phthalate	<				< 1			<			
81	Di-n-Butyl Phthalate	<				< 1			<			
82	2,4-Dinitrotoluene	<				< 1			<			
83	2,6-Dinitrotoluene	<				< 1			<			

Note: Nondetected data are indicated by a "<"
Blank cells indicate no data collect

# in CTR	CONSTITUENT	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00
44	Vinyl Chloride										
45	2-Chlorophenol										
46	2,4-Dichlorophenol										
47	2,4-Dimethylphenol										
48	2-Methyl-4,6-Dinitrophenol										
49	2,4-Dinitrophenol										
50	2-Nitrophenol										
51	4-Nitrophenol										
52	3-Methyl-4-Chlorophenol										
53	Pentachlorophenol										
54	Phenol		<	50					<	100	
55	2,4,6-Trichlorophenol										
56	Acenaphthene		<	0.5			<	0.5	<	0.5	
57	Acenephthylene		<	1			<	1	<	1	
58	Anthracene		<	0.05			<	0.05	<	0.05	
59	Benzidine		<				<		<		
60	Benzo(a)Anthracene		<	0.05			<	0.05	<	0.05	
61	Benzo(a)Pyrene		<	0.05			<	0.05	<	0.05	
62	Benzo(b)Fluoranthene		<	0.1			<	0.1	<	0.1	
63	Benzo(ghi)Perylene		<	0.1			<	0.1	<	0.1	
64	Benzo(k)Fluoranthene		<	0.05			<	0.05	<	0.05	
65	Bis(2-Chloroethoxy)Methane		<				<		<		
66	Bis(2-Chloroethyl)Ether		<				<		<		
67	Bis(2-Chloroisopropyl)Ether		<				<		<		
68	Bis(2-Ethylhexyl)Phthalate		<				<		<		
69	4-Bromophenyl Phenyl Ether		<				<		<		
70	Butylbenzyl Phthalate		<				<		<		
71	2-Chloronaphthalene		<				<		<		
72	4-Chlorophenyl Phenyl Ether		<				<		<		
73	Chrysene		<	0.05			<	0.05	<	0.05	
74	Dibenzo(a,h)Anthracene		<	0.2			<	0.2	<	0.2	
75	1,2 Dichlorobenzene		<				<		<		
76	1,3 Dichlorobenzene		<				<		<		
77	1,4 Dichlorobenzene		<				<		<		
78	3,31-Dichlorobenzidine		<				<		<		
79	Diethyl Phthalate		<				<		<		
80	Dimethyl Phthalate		<				<		<		
81	Di-n-Butyl Phthalate		<				<		<		
82	2,4-Dinitrotoluene		<				<		<		
83	2,6-Dinitrotoluene		<				<		<		

Note: Nondetected data are indicated by a "<"
Blank cells indicate no data collect

# in CTR	CONSTITUENT	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01
44	Vinyl Chloride										
45	2-Chlorophenol										
46	2,4-Dichlorophenol										
47	2,4-Dimethylphenol										
48	2-Methyl-4,6-Dinitrophenol										
49	2,4-Dinitrophenol										
50	2-Nitrophenol										
51	4-Nitrophenol										
52	3-Methyl-4-Chlorophenol										
53	Pentachlorophenol										
54	Phenol				<	50					<
55	2,4,6-Trichlorophenol										
56	Acenaphthene				<	0.26	< 0.26	<	5		<
57	Acenephthylene				<	0.28	< 0.28	<	2.5		<
58	Anthracene				<	0.02	< 0.02	<	0.1		<
59	Benzidine				<		<	<			<
60	Benzo(a)Anthracene				<	0.02	< 0.02	<	0.25		<
61	Benzo(a)Pyrene				<	0.03	< 0.03	<	0.25		<
62	Benzo(b)Fluoranthene				<	0.06	< 0.06	<	0.1		<
63	Benzo(ghi)Perylene				<	0.11	< 0.11	<	0.4		<
64	Benzo(k)Fluoranthene				<	0.02	< 0.02	<	0.1		<
65	Bis(2-Chloroethoxy)Methane										
66	Bis(2-Chloroethyl)Ether										
67	Bis(2-Chloroisopropyl)Ether										
68	Bis(2-Ethylhexyl)Phthalate										
69	4-Bromophenyl Phenyl Ether										
70	Butylbenzyl Phthalate										
71	2-Chloronaphthalene										
72	4-Chlorophenyl Phenyl Ether										
73	Chrysene				<	0.03	< 0.03	<	0.25		<
74	Dibenzo(a,h)Anthracene				<	0.1	< 0.1	<	1		<
75	1,2 Dichlorobenzene										
76	1,3 Dichlorobenzene										
77	1,4 Dichlorobenzene										
78	3,31-Dichlorobenzidine										
79	Diethyl Phthalate										
80	Dimethyl Phthalate										
81	Di-n-Butyl Phthalate										
82	2,4-Dinitrotoluene										
83	2,6-Dinitrotoluene										

Note: Nondetected data are indicated by a "<"							
	Blank cells indicate no data collect						
# in CTR	CONSTITUENT	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01
44	Vinyl Chloride						
45	2-Chlorophenol						
46	2,4-Dichlorophenol						
47	2,4-Dimethylphenol						
48	2-Methyl-4,6-Dinitrophenol						
49	2,4-Dinitrophenol						
50	2-Nitrophenol						
51	4-Nitrophenol						
52	3-Methyl-4-Chlorophenol						
53	Pentachlorophenol						
54	Phenol	50					
55	2,4,6-Trichlorophenol						
56	Acenaphthene	0.17		<	0.5		
57	Acenephthylene	0.21		<	1		
58	Anthracene	0.05		<	0.05		
59	Benzidine			<			
60	Benzo(a)Anthracene	0.001		<	0.05		
61	Benzo(a)Pyrene	0.006		<	0.05		
62	Benzo(b)Fluoranthene	0.006		<	0.1		
63	Benzo(ghi)Perylene	0.006		<	0.1		
64	Benzo(k)Fluoranthene	0.004		<	0.05		
65	Bis(2-Chloroethoxy)Methane						
66	Bis(2-Chloroethyl)Ether						
67	Bis(2-Chloroisopropyl)Ether						
68	Bis(2-Ethylhexyl)Phthalate						
69	4-Bromophenyl Phenyl Ether						
70	Butylbenzyl Phthalate						
71	2-Chloronaphthalene						
72	4-Chlorophenyl Phenyl Ether						
73	Chrysene	0.003		<	0.05		
74	Dibenzo(a,h)Anthracene	0.011		<	0.2		
75	1,2 Dichlorobenzene						
76	1,3 Dichlorobenzene						
77	1,4 Dichlorobenzene						
78	3,31-Dichlorobenzidine						
79	Diethyl Phthalate						
80	Dimethyl Phthalate						
81	Di-n-Butyl Phthalate						
82	2,4-Dinitrotoluene						
83	2,6-Dinitrotoluene						

Note: Nondetected data are indicated by a "<" in the column to the left of the sampling data entry.
Blank cells indicate no data collected for that constituent that month.

# in CTR	CONSTITUENT		Jan-99	Feb-99	Mar-99	Apr-99	May-99	Jun-99	Jul-99	Aug-99	Sep-99	Oct-99
84	Di-n-Octyl Phthalate	<			<	1		<				
85	1,2-Diphenylhydrazine	<			<	1		<				
86	Fluoranthene	<	0.05		<	1		<	0.25			
87	Fluorene	<	0.02		<	1		<	0.5			
88	Hexachlorobenzene	<			<	1		<				
89	Hexachlorobutadiene	<			<	1		<				
90	Hexachlorocyclopentadiene	<			<	1		<				
91	Hexachloroethane	<			<	1		<				
92	Indeno(1,2,3-cd) Pyrene	<	0.02		<	1		<	0.25			
93	Isophorone	<			<	1		<				
94	naphthalene	<	0.2		<	1		<	2.5			
95	Nitrobenzene	<			<	1		<				
96	N-Nitrosodimethylamine	<			<	1		<				
97	N-Nitrosodi-n-Propylamine	<			<	1		<				
98	N-Nitrosodiphenylamine	<			<	1		<				
99	Phenanthrene	<	0.05		<	1		<	0.2			
100	Pyrene	<	0.05		<	1		<	0.5			
101	1,2,4-Trichlorobenzene											
102	Aldrin											
103	alpha-BHC											
104	beta-BHC											
105	gamma-BHC											
106	delta-BHC											
107	Chlordane											
108	4,4-DDT											
109	4,4-DDE											
110	4,4-DDD											
111	Dieldrin											
112	alpha-Endosulfan											
113	beta-Endosulfan											
114	Endosulfan Sulfate											
115	Endrin											
116	Endrin Aldehyde											
117	Heptachlor											
118	Heptchlor Epoxide											
119 -125	PCBs											
126	Toxaphene											
	Tirbutyltin											
	Chlorpyrifos											
	Diazinon											

Note: Nondetected data are indicated by a "<"
Blank cells indicate no data collect

# in CTR	CONSTITUENT	Nov-99	Dec-99	Jan-00	Feb-00	Mar-00	Apr-00	May-00	Jun-00	Jul-00	Aug-00
84	Di-n-Octyl Phthalate		<				<		<		
85	1,2-Diphenylhydrazine		<				<		<		
86	Fluoranthene		<	0.1			<	0.1	<	0.1	
87	Fluorene		<	0.1			<	0.1	<	0.1	
88	Hexachlorobenzene		<				<		<		
89	Hexachlorobutadiene		<				<		<		
90	Hexachlorocyclopentadiene		<				<		<		
91	Hexachloroethane		<				<		<		
92	Indeno(1,2,3-cd) Pyrene		<	0.05			<	0.05	<	0.05	
93	Isophorone		<				<		<		
94	naphthalene		<	0.5			<	0.5	<	0.5	
95	Nitrobenzene		<				<		<		
96	N-Nitrosodimethylamine		<				<		<		
97	N-Nitrosodi-n-Propylamine		<				<		<		
98	N-Nitrosodiphenylamine		<				<		<		
99	Phenanthrene		<	0.05			<	0.05	<	0.05	
100	Pyrene		<	0.05			<	0.05	<	0.05	
101	1,2,4-Trichlorobenzene										
102	Aldrin										
103	alpha-BHC										
104	beta-BHC										
105	gamma-BHC										
106	delta-BHC										
107	Chlordane										
108	4,4-DDT										
109	4,4-DDE										
110	4,4-DDD										
111	Dieldrin										
112	alpha-Endosulfan										
113	beta-Endosulfan										
114	Endosulfan Sulfate										
115	Endrin										
116	Endrin Aldehyde										
117	Heptachlor										
118	Heptchlor Epoxide										
119 -125	PCBs										
126	Toxaphene										
	Tirbutyltin										
	Chlorpyrifos										
	Diazinon										

Note: Nondetected data are indicated by a "<"
Blank cells indicate no data collect

# in CTR	CONSTITUENT	Sep-00	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01
84	Di-n-Octyl Phthalate										
85	1,2-Diphenylhydrazine										
86	Fluoranthene				<	0.03 <	0.03	<	0.25		<
87	Fluorene				<	0.04 <	0.04	<	0.5		<
88	Hexachlorobenzene										
89	Hexachlorobutadiene										
90	Hexachlorocyclopentadiene										
91	Hexachloroethane										
92	Indeno(1,2,3-cd) Pyrene				<	0.05 <	0.05	<	0.25		<
93	Isophorone										
94	naphthalene				<	0.11 <	0.11	<	2.5		<
95	Nitrobenzene										
96	N-Nitrosodimethylamine										
97	N-Nitrosodi-n-Propylamine										
98	N-Nitrosodiphenylamine										
99	Phenanthrene				<	0.02 <	0.02	<	0.2		<
100	Pyrene				<	0.02 <	0.02	<	0.5		<
101	1,2,4-Trichlorobenzene										
102	Aldrin										
103	alpha-BHC										
104	beta-BHC										
105	gamma-BHC										
106	delta-BHC										
107	Chlordane										
108	4,4-DDT										
109	4,4-DDE										
110	4,4-DDD										
111	Dieldrin										
112	alpha-Endosulfan										
113	beta-Endosulfan										
114	Endosulfan Sulfate										
115	Endrin										
116	Endrin Aldehyde										
117	Heptachlor										
118	Heptchlor Epoxide										
119 -125	PCBs										
126	Toxaphene										
	Tirbutyltin										
	Chlorpyrifos										
	Diazinon										

Note: Nondetected data are indicated by a "<"							
	Blank cells indicate no data collect						
# in CTR	CONSTITUENT	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01
84	Di-n-Octyl Phthalate						
85	1,2-Diphenylhydrazine						
86	Fluoranthene	0.011			< 0.1		
87	Fluorene	0.069			< 0.1		
88	Hexachlorobenzene						
89	Hexachlorobutadiene						
90	Hexachlorocyclopentadiene						
91	Hexachloroethane						
92	Indeno(1,2,3-cd) Pyrene	0.004			< 0.05		
93	Isophorone						
94	naphthalene	0.17			< 0.5		
95	Nitrobenzene						
96	N-Nitrosodimethylamine						
97	N-Nitrosodi-n-Propylamine						
98	N-Nitrosodiphenylamine						
99	Phenanthrene	0.034			< 0.05		
100	Pyrene	0.03			< 0.05		
101	1,2,4-Trichlorobenzene						
102	Aldrin						
103	alpha-BHC						
104	beta-BHC						
105	gamma-BHC						
106	delta-BHC						
107	Chlordane						
108	4,4-DDT						
109	4,4-DDE						
110	4,4-DDD						
111	Dieldrin						
112	alpha-Endosulfan						
113	beta-Endosulfan						
114	Endosulfan Sulfate						
115	Endrin						
116	Endrin Aldehyde						
117	Heptachlor						
118	Heptchlor Epoxide						
119 -125	PCBs						
126	Toxaphene						
	Tirbutyltin						
	Chlorpyrifos						
	Diazinon						

		Basin Plan Objectives, ug/L				CTR Water Quality Objectives, ug/L		
		Saltwater		Freshwater		Saltwater		Human Health
# in CTR	CONSTITUENT	4-day	1-hr	Instant Max.	24-hr avg	CMC	CCC	Organisms only
2	Arsenic	36	69			69	36	
4	Cadmium	9.3	43			42	9.3	
5b	Chromium	50	1100			1100	50	
6	Copper		4.9			5.78	3.1	
7	Lead	5.6	140			220	8.5	
	Lead for CV calculation	5.6	140			220	8.5	
8	Mercury	0.025	2.1					0.051
9	Nickel			140	7.1	74	8.3	
10	Selenium					5	5	
11	Silver			2.3		2.24		
13	Zinc			170	58	95	85	
14	Cyanide		5			1	1	220000
16	2,3,7,8-TCDD (Dioxin)							0.000000014
17	Acrolein							780
18	Acrylonitrile							0.66
19	Benzene							71
20	Bromoform							360
21	Carbon Tetrachloride							4.4
22	Chlorobenzene							21000
23	Chlordibromomethane							34
24	Chloroethane							
25	2-Chloroethylvinyl Ether							
26	Chloroform					130		
27	Dichlorobromomethane							46
28	1,1-Dichloroethane							
29	1,2-Dichloroethane							99
30	1,1-Dichloroethylene							3.2
31	1,2-Dichloropropane							39
32	1,3-Dichloropropylene							1700
33	Ethylbenzene							29000
34	Methyl Bromide							4000
35	Methyl Chloride							n
36	Methylene Chloride							1600
37	1,1,2,2-Tetrachloroethane							11
38	Tetrachloroethylene							8.85
39	Toluene							200000
40	1,2-Trans-Dichloroethylene							140000
41	1,1,1-Trichloroethane							
42	1,1,2-Trichloroethane							42
43	Trichloroethylene							81
44	Vinyl Chloride							525
45	2-Chlorophenol							400
46	2,4-Dichlorophenol							790
47	2,4-Dimethylphenol							2300
48	2-Methyl-4,6-Dinitrophenol							765

		Basin Plan Objectives, ug/L				CTR Water Quality Objectives, ug/L		
		Saltwater		Freshwater		Saltwater		Human Health
# in CTR	CONSTITUENT	4-day	1-hr	Instant Max.	24-hr avg	CMC	CCC	Organisms only
49	2,4-Dinitrophenol							14000
50	2-Nitrophenol							
51	4-Nitrophenol							
52	3-Methyl-4-Chlorophenol							
53	Pentachlorophenol					13	7.9	8.2
54	Phenol		500					4600000
55	2,4,6-Trichlorophenol							6.5
56	Acenaphthene							2700
57	Acenephthylene							
58	Anthracene							110000
59	Benzidine							0.00054
60	Benzo(a)Anthracene							0.049
61	Benzo(a)Pyrene							0.049
62	Benzo(b)Fluoranthene							0.049
63	Benzo(ghi)Perylene							
64	Benzo(k)Fluoranthene							0.049
65	Bis(2-Chloroethoxy)Methane							
66	Bis(2-Chloroethyl)Ether							1.4
67	Bis(2-Chloroisopropyl)Ether							170000
68	Bis(2-Ethylhexyl)Phthalate							5.9
69	4-Bromophenyl Phenyl Ether							
70	Butylbenzyl Phthalate							5200
71	2-Chloronaphthalene							4300
72	4-Chlorophenyl Phenyl Ether							
73	Chrysene							0.049
74	Dibenzo(a,h)Anthracene							0.049
75	1,2 Dichlorobenzene							17000
76	1,3 Dichlorobenzene							2600
77	1,4 Dichlorobenzene							2600
78	3,31-Dichlorobenzidine							0.077
79	Diethyl Phthalate							120000
80	Dimethyl Phthalate							2900000
81	Di-n-Butyl Phthalate							12000
82	2,4-Dinitrotoluene							9.1
83	2,6-Dinitrotoluene							
84	Di-n-Octyl Phthalate							
85	1,2-Diphenylhydrazine							0.54
86	Fluoranthene							370
87	Fluorene							14000
88	Hexachlorobenzene							0.00077
89	Hexachlorobutadiene							50
90	Hexachlorocyclopentadiene							17000
91	Hexachloroethane							8.9
92	Indeno(1,2,3-cd) Pyrene							0.049
93	Isophorone							600

		Basin Plan Objectives, ug/L				CTR Water Quality Objectives, ug/L		
		Saltwater		Freshwater		Saltwater		Human Health
# in CTR	CONSTITUENT	4-day	1-hr	Instant Max.	24-hr avg	CMC	CCC	Organisms only
94	naphthalene							
95	Nitrobenzene							1900
96	N-Nitrosodimethylamine							8.1
97	N-Nitrosodi-n-Propylamine							1.4
98	N-Nitrosodiphenylamine							16
99	Phenanthrene							
100	Pyrene							11000
101	1,2,4-Trichlorobenzene							
102	Aldrin					1.3		0.00014
103	alpha-BHC							0.013
104	beta-BHC							0.046
105	gamma-BHC					0.16		0.063
106	delta-BHC							
107	Chlordane					0.09	0.004	0.00059
108	4,4-DDT					0.13	0.001	0.00059
109	4,4-DDE							0.00059
110	4,4-DDD							0.00084
111	Dieldrin					0.71	0.0019	0.00014
112	alpha-Endosulfan					0.034	0.0087	240
113	beta-Endosulfan					0.034	0.0087	240
114	Endosulfan Sulfate							240
115	Endrin					0.037	0.0023	0.81
116	Endrin Aldehyde							0.81
117	Heptachlor					0.053	0.0036	0.00021
118	Heptchlor Epoxide					0.053	0.0036	0.00011
119 -12	PCBs						0.03	0.00017
126	Toxaphene					0.21	0.0002	0.00075
	Tributyltin							
	Chlorpyrifos							
	Diazinon							

		Basin Plan Objectives				CTR Objectives							Steps in SIP Step 1
		Saltwater		Freshwater		Saltwater		Human Health					
# in CTR	CONSTITUENT	4-day	1-hr	Instan-taneous Maximum	24-hr avg	CMC	CCC	Organisms only	Lowest Acute, Adjusted	Lowest Chronic Standard	Human Health?		Governing WQO
2	Arsenic	36	69			69	36		69	36	No		36
4	Cadmium	9.3	43			42	9.3		42	9.3	No		9.3
5b	Chromium	50	1100			1100	50		1100	50	No		50
6	Copper		4.9			5.78	3.1		4.9	3.73494	No		3.7
7	Lead	5.6	140			220	8.5		140	5.6	No		5.6
8	Mercury	0.025	2.1					0.051	2.1	0.025		0.051	0.025
9	Nickel			140	7.1	74	8.3		74	7.1	No		7.1
10	Selenium					5	5		5	5	No		5
11	Silver			2.3		2.24			2.24	0	No		2.24
13	Zinc			170	58	95	85		95	58	No		58
14	Cyanide		5			1	1	220000	1	1		220000	1
16	2,3,7,8-TCDD (Dioxin)							0.000000014	0	0		1.4E-08	1.4E-08
17	Acrolein							780	0	0		780	780
18	Acrylonitrile							0.66	0	0		0.66	0.66
19	Benzene							71	0	0		71	71
20	Bromoform							360	0	0		360	360
21	Carbon Tetrachloride							4.4	0	0		4.4	4.4
22	Chlorobenzene							21000	0	0		21000	21000
23	Chlordibromomethane							34	0	0		34	34
24	Chloroethane								0	0	No		N.Obj.
25	2-Chloroethylvinyl Ether								0	0	No		N.Obj.
26	Chloroform					130			130	0	No		130
27	Dichlorobromomethane							46	0	0		46	46
28	1,1-Dichloroethane								0	0	No		N.Obj.
29	1,2-Dichloroethane							99	0	0		99	99
30	1,1-Dichloroethylene							3.2	0	0		3.2	3.2
31	1,2-Dichloropropane							39	0	0		39	39
32	1,3-Dichloropropylene							1700	0	0		1700	1700
33	Ethylbenzene							29000	0	0		29000	29000
34	Methyl Bromide							4000	0	0		4000	4000
35	Methyl Chloride							n	0	0	n		N.Obj.

		Step 2								Step 3
		ce or "N/A" means incomplete discharger data								
# in CTR	CONSTITUENT	Effluent Data Range; NA =>RP determined by bckgrd	Number nondetects	Total number of Samples	Average of quantified data values	Standard Deviation (SD)	Coefficient of Variance By SIP Formulas	Ave + 3*(SD)	Range of Detection Limits (DL's) for effluent data (1 value means only one DL)	MEC= Maximum Effluent Concentration (if all ND, and any DL< WQO, then lowest DL)
2	Arsenic	2.1 to 6.9	7	12	4.2200	1.8674	0.6000	9.8221	2	6.9
4	Cadmium	1 to 1	10	11	1.0000	N/A	0.6000	N/A	1	1
5b	Chromium	2.8 to 7.1	8	12	4.1500	1.9875	0.6000	10.1124	1 to 10	7.1
6	Copper	5.2 to 24	14	36	9.8682	5.3528	0.4829	25.9267	2 to 20	24
7	Lead	3.4 to 5.7	9	12	4.8333	1.2503	0.6000	8.5843	2 to 5	5.7
8	Mercury	0.0023 to 0.014	12	36	0.0053	0.0030	1.3009	0.0143	0.004 to 0.2	0.014
9	Nickel	2.3 to 17	8	12	6.1000	7.2677	0.6000	27.9032	2 to 10	17
10	Selenium	5 to 5	16	17	5.0000	N/A	0.6000	N/A	1 to 20	5
11	Silver	0.3 to 14	6	12	4.6167	4.8367	0.6000	19.1268	0.2 to 10	14
13	Zinc	0.078 to 74	1	12	31.8071	24.0288	0.7361	103.8936	50	74
14	Cyanide	5 to 5	11	12	5.0000	N/A	0.6000	N/A	5	5
16	2,3,7,8-TCDD (Dioxin)	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
17	Acrolein	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
18	Acrylonitrile	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
19	Benzene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
20	Bromoform	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
21	Carbon Tetrachloride	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
22	Chlorobenzene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
23	Chlordibromomethane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
24	Chloroethane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
25	2-Chloroethylvinyl Ether	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
26	Chloroform	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
27	Dichlorobromomethane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
28	1,1-Dichloroethane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
29	1,2-Dichloroethane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
30	1,1-Dichloroethylene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
31	1,2-Dichloropropane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
32	1,3-Dichloropropylene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
33	Ethylbenzene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
34	Methyl Bromide	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
35	Methyl Chloride	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.

		Step 4	Step 5			Step 6	Step 7
# in CTR	CONSTITUENT	MEC >WQO or MEC = WQO? Yes => RP	Background (Maximum Observed Value, Central Bay RMP Sites)	Governing WQO	Ambient Background Arithmetic Mean, (for Human Health Calculations)	Bckgrnd > WQO? Yes= RP NA=background not available	RP? Y = Yes, N=No, (Indterminacy: Ib = no bkgnd, Io = no WQO , Idl = all DLs >WQO)
2	Arsenic	No	2.46	36		No	No
4	Cadmium	No	0.127	9.3		No	No
5b	Chromium	No	4.4	50		No	No
6	Copper	Yes	2.455	3.7		No	Yes
7	Lead	Yes	0.804	5.6		No	Yes
8	Mercury	No	0.006	0.025		No	Yes
9	Nickel	Yes	3.5	7.1		No	Yes
10	Selenium	Yes	0.39	5		No	Yes
11	Silver	Yes	0.068	2.24		No	Yes
13	Zinc	Yes	4.6	58		No	Yes
14	Cyanide	Yes	N/A	1		N/A	Yes
16	2,3,7,8-TCDD (Dioxin)	Inc.	N/A	0.000000014		N/A	Ib,
17	Acrolein	Inc.	N/A	780		N/A	Ib,
18	Acrylonitrile	Inc.		0.66		N/A	Ib,
19	Benzene	Inc.	N/A	71		N/A	Ib,
20	Bromoform	Inc.		360		N/A	Ib,
21	Carbon Tetrachloride	Inc.		4.4		N/A	Ib,
22	Chlorobenzene	Inc.		21000		N/A	Ib,
23	Chlordibromomethane	Inc.		34		N/A	Ib,
24	Chloroethane	Inc.		N.Obj.		N/A	Ib, Io,
25	2-Chloroethylvinyl Ether	Inc.		N.Obj.		N/A	Ib, Io,
26	Chloroform	Inc.	N/A	130		N/A	Ib,
27	Dichlorobromomethane	Inc.		46		N/A	Ib,
28	1,1-Dichloroethane	Inc.		N.Obj.		N/A	Ib, Io,
29	1,2-Dichloroethane	Inc.		99		N/A	Ib,
30	1,1-Dichloroethylene	Inc.		3.2		N/A	Ib,
31	1,2-Dichloropropane	Inc.		39		N/A	Ib,
32	1,3-Dichloropropylene	Inc.		1700		N/A	Ib,
33	Ethylbenzene	Inc.		29000		N/A	Ib,
34	Methyl Bromide	Inc.		4000		N/A	Ib,
35	Methyl Chloride	Inc.	N/A	N.Obj.		N/A	Ib, Io,

		Basin Plan Objectives				CTR Objectives						Steps in SIP	
		Saltwater		Freshwater		Saltwater		Human Health				Step 1	
# in CTR	CONSTITUENT	4-day	1-hr	Instan-taneous Maximum	24-hr avg	CMC	CCC	Organisms only	Lowest Acute, Adjusted	Lowest Chronic Standard	Human Health?	Governing WQO	
36	Methylene Chloride							1600	0	0	1600	1600	
37	1,1,2,2-Tetrachloroethane							11	0	0	11	11	
38	Tetrachloroethylene							8.85	0	0	8.85	8.85	
39	Toluene							200000	0	0	200000	200000	
40	1,2-Trans-Dichloroethylene							140000	0	0	140000	140000	
41	1,1,1-Trichloroethane								0	0	No	N.Obj.	
42	1,1,2-Trichloroethane							42	0	0	42	42	
43	Trichloroethylene							81	0	0	81	81	
44	Vinyl Chloride							525	0	0	525	525	
45	2-Chlorophenol							400	0	0	400	400	
46	2,4-Dichlorophenol							790	0	0	790	790	
47	2,4-Dimethylphenol							2300	0	0	2300	2300	
48	2-Methyl-4,6-Dinitrophenol							765	0	0	765	765	
49	2,4-Dinitrophenol							14000	0	0	14000	14000	
50	2-Nitrophenol								0	0	No	N.Obj.	
51	4-Nitrophenol								0	0	No	N.Obj.	
52	3-Methyl-4-Chlorophenol								0	0	No	N.Obj.	
53	Pentachlorophenol					13	7.9	8.2	13	7.9	8.2	7.9	
54	Phenol		500					4600000	500	0	4600000	500	
55	2,4,6-Trichlorophenol							6.5	0	0	6.5	6.5	
56	Acenaphthene							2700	0	0	2700	2700	
57	Acenephthylene								0	0	No	N.Obj.	
58	Anthracene							110000	0	0	110000	110000	
59	Benzidine							0.00054	0	0	0.00054	0.00054	
60	Benzo(a)Anthracene							0.049	0	0	0.049	0.049	
61	Benzo(a)Pyrene							0.049	0	0	0.049	0.049	
62	Benzo(b)Fluoranthene							0.049	0	0	0.049	0.049	
63	Benzo(ghi)Perylene								0	0	No	N.Obj.	
64	Benzo(k)Fluoranthene							0.049	0	0	0.049	0.049	
65	Bis(2-Chloroethoxy)Methane								0	0	No	N.Obj.	
66	Bis(2-Chloroethyl)Ether							1.4	0	0	1.4	1.4	

		Step 2								Step 3
		ce or "N/A" means incomplete discharger data								
# in CTR	CONSTITUENT	Effluent Data Range; NA =>RP determined by bckgrd	Number nondetects	Total number of Samples	Average of quantified data values	Standard Deviation (SD)	Coefficient of Variance By SIP Formulas	Ave + 3*(SD)	Range of Detection Limits (DL's) for effluent data (1 value means only one DL)	MEC= Maximum Effluent Concentration (if all ND, and any DL< WQO, then lowest DL)
36	Methylene Chloride	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
37	1,1,2,2-Tetrachloroethane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
38	Tetrachloroethylene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
39	Toluene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
40	1,2-Trans-Dichloroethylene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
41	1,1,1-Trichloroethane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
42	1,1,2-Trichloroethane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
43	Trichloroethylene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
44	Vinyl Chloride	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
45	2-Chlorophenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
46	2,4-Dichlorophenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
47	2,4-Dimethylphenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
48	2-Methyl-4,6-Dinitrophenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
49	2,4-Dinitrophenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
50	2-Nitrophenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
51	4-Nitrophenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
52	3-Methyl-4-Chlorophenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
53	Pentachlorophenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
54	Phenol	71 to 71	6	7	71.0000	N/A	0.6000	N/A	50 to 100	71
55	2,4,6-Trichlorophenol	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
56	Acenaphthene	N/A	11	11	N/A	N/A	0.6000	N/A	0.17 to 5	0.17
57	Acenephthylene	N/A	11	11	N/A	N/A	0.6000	N/A	0.2 to 2.5	0.2
58	Anthracene	N/A	11	11	N/A	N/A	0.6000	N/A	0.02 to 1	0.02
59	Benzidine	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
60	Benzo(a)Anthracene	N/A	11	11	N/A	N/A	0.6000	N/A	0.001 to 1	0.001
61	Benzo(a)Pyrene	N/A	11	11	N/A	N/A	0.6000	N/A	0.006 to 1	0.006
62	Benzo(b)Fluoranthene	N/A	11	11	N/A	N/A	0.6000	N/A	0.006 to 1	0.006
63	Benzo(ghi)Perylene	N/A	11	11	N/A	N/A	0.6000	N/A	0.006 to 1	0.006
64	Benzo(k)Fluoranthene	N/A	11	11	N/A	N/A	0.6000	N/A	0.004 to 1	0.004
65	Bis(2-Chloroethoxy)Methane	N/A	2	2	N/A	N/A	0.6000	N/A	0 to 1	0
66	Bis(2-Chloroethyl)Ether	N/A	2	2	N/A	N/A	0.6000	N/A	0 to 1	0

		Step 4	Step 5		Step 6		Step 7
# in CTR	CONSTITUENT	MEC >WQO or MEC = WQO? Yes => RP	Background (Maximum Observed Value, Central Bay RMP Sites)	Governing WQO	Ambient Background Arithmetic Mean, (for Human Health Calculations)	Bckgrnd > WQO? Yes= RP NA=background not available	RP? Y = Yes, N=No, (Indterminacy: Ib = no bkgnd, Io = no WQO , Idl = all DLs >WQO)
36	Methylene Chloride	Inc.		1600		N/A	Ib,
37	1,1,2,2-Tetrachloroethane	Inc.		11		N/A	Ib,
38	Tetrachloroethylene	Inc.		8.85		N/A	Ib,
39	Toluene	Inc.	N/A	200000		N/A	Ib,
40	1,2-Trans-Dichloroethylene	Inc.		140000		N/A	Ib,
41	1,1,1-Trichloroethane	Inc.		N.Obj.		N/A	Ib, Io,
42	1,1,2-Trichloroethane	Inc.		42		N/A	Ib,
43	Trichloroethylene	Inc.		81		N/A	Ib,
44	Vinyl Chloride	Inc.		525		N/A	Ib,
45	2-Chlorophenol	Inc.	N/A	400		N/A	Ib,
46	2,4-Dichlorophenol	Inc.	N/A	790		N/A	Ib,
47	2,4-Dimethylphenol	Inc.	N/A	2300		N/A	Ib,
48	2-Methyl-4,6-Dinitrophenol	Inc.	N/A	765		N/A	Ib,
49	2,4-Dinitrophenol	Inc.	N/A	14000		N/A	Ib,
50	2-Nitrophenol	Inc.	N/A	N.Obj.		N/A	Ib, Io,
51	4-Nitrophenol	Inc.	N/A	N.Obj.		N/A	Ib, Io,
52	3-Methyl-4-Chlorophenol	Inc.	N/A	N.Obj.		N/A	Ib, Io,
53	Pentachlorophenol	Inc.	N/A	7.9		N/A	Ib,
54	Phenol	No	N/A	500		N/A	Ib,
55	2,4,6-Trichlorophenol	Inc.	N/A	6.5		N/A	Ib,
56	Acenaphthene	No	0.0015	2700		No	No
57	Acenephthylene	No	0.00053	N.Obj.		No	Io,
58	Anthracene	No	0.0005	110000		No	No
59	Benzidine	No	N/A	0.00054		N/A	Ib,
60	Benzo(a)Anthracene	No	0.0053	0.049		No	No
61	Benzo(a)Pyrene	No	0.000287	0.049		No	No
62	Benzo(b)Fluoranthene	No	0.0046	0.049		No	No
63	Benzo(ghi)Perylene	No	0.0027	N.Obj.		No	Io,
64	Benzo(k)Fluoranthene	No	0.0015	0.049		No	No
65	Bis(2-Chloroethoxy)Methane	No	N/A	N.Obj.		N/A	Ib, Io,
66	Bis(2-Chloroethyl)Ether	No	N/A	1.4		N/A	Ib,

		Basin Plan Objectives				CTR Objectives							Steps in SIP
		Saltwater		Freshwater		Saltwater		Human Health					Step 1
# in CTR	CONSTITUENT	4-day	1-hr	Instan-taneous Maximum	24-hr avg	CMC	CCC	Organisms only	Lowest Acute, Adjusted	Lowest Chronic Standard	Human Health?	Governing WQO	
67	Bis(2-Chloroisopropyl)Ether							170000	0	0	170000	170000	
68	Bis(2-Ethylhexyl)Phthalate							5.9	0	0	5.9	5.9	
69	4-Bromophenyl Phenyl Ether								0	0	No	N.Obj.	
70	Butylbenzyl Phthalate							5200	0	0	5200	5200	
71	2-Chloronaphthalene							4300	0	0	4300	4300	
72	4-Chlorophenyl Phenyl Ether								0	0	No	N.Obj.	
73	Chrysene							0.049	0	0	0.049	0.049	
74	Dibenzo(a,h)Anthracene							0.049	0	0	0.049	0.049	
75	1,2 Dichlorobenzene							17000	0	0	17000	17000	
76	1,3 Dichlorobenzene							2600	0	0	2600	2600	
77	1,4 Dichlorobenzene							2600	0	0	2600	2600	
78	3,31-Dichlorobenzidine							0.077	0	0	0.077	0.077	
79	Diethyl Phthalate							120000	0	0	120000	120000	
80	Dimethyl Phthalate							2900000	0	0	2900000	2900000	
81	Di-n-Butyl Phthalate							12000	0	0	12000	12000	
82	2,4-Dinitrotoluene							9.1	0	0	9.1	9.1	
83	2,6-Dinitrotoluene								0	0	No	N.Obj.	
84	Di-n-Octyl Phthalate								0	0	No	N.Obj.	
85	1,2-Diphenylhydrazine							0.54	0	0	0.54	0.54	
86	Fluoranthene							370	0	0	370	370	
87	Fluorene							14000	0	0	14000	14000	
88	Hexachlorobenzene							0.00077	0	0	0.00077	0.00077	
89	Hexachlorobutadiene							50	0	0	50	50	
90	Hexachlorocyclopentadiene							17000	0	0	17000	17000	
91	Hexachloroethane							8.9	0	0	8.9	8.9	
92	Indeno(1,2,3-cd) Pyrene							0.049	0	0	0.049	0.049	
93	Isophorone							600	0	0	600	600	
94	naphthalene								0	0	No	N.Obj.	
95	Nitrobenzene							1900	0	0	1900	1900	
96	N-Nitrosodimethylamine							8.1	0	0	8.1	8.1	
97	N-Nitrosodi-n-Propylamine							1.4	0	0	1.4	1.4	

		Step 2								Step 3
		ce or "N/A" means incomplete discharger data								
# in CTR	CONSTITUENT	Effluent Data Range; NA =>RP determined by bckgrd	Number nondetects	Total number of Samples	Average of quantified data values	Standard Deviation (SD)	Coefficient of Variance By SIP Formulas	Ave + 3*(SD)	Range of Detection Limits (DL's) for effluent data (1 value means only one DL)	MEC= Maximum Effluent Concentration (if all ND, and any DL< WQO, then lowest DL)
67	Bis(2-Chloroisopropyl)Ether	N/A	2	2	N/A	N/A	0.6000	N/A	0 to 1	0
68	Bis(2-Ethylhexyl)Phthalate	N/A	2	2	N/A	N/A	0.6000	N/A	0 to 1	0
69	4-Bromophenyl Phenyl Ether	N/A	2	2	N/A	N/A	0.6000	N/A	0 to 1	0
70	Butylbenzyl Phthalate	N/A	2	2	N/A	N/A	0.6000	N/A	0 to 1	0
71	2-Chloronaphthalene	N/A	2	2	N/A	N/A	0.6000	N/A	0 to 1	0
72	4-Chlorophenyl Phenyl Ether	N/A	2	2	N/A	N/A	0.6000	N/A	0 to 1	0
73	Chrysene	N/A	11	11	N/A	N/A	0.6000	N/A	0.003 to 1	0.003
74	Dibenzo(a,h)Anthracene	N/A	11	11	N/A	N/A	0.6000	N/A	0.011 to 1	0.011
75	1,2 Dichlorobenzene	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
76	1,3 Dichlorobenzene	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
77	1,4 Dichlorobenzene	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
78	3,31-Dichlorobenzidine	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
79	Diethyl Phthalate	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
80	Dimethyl Phthalate	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
81	Di-n-Butyl Phthalate	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
82	2,4-Dinitrotoluene	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
83	2,6-Dinitrotoluene	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
84	Di-n-Octyl Phthalate	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
85	1,2-Diphenylhydrazine	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
86	Fluoranthene	N/A	11	11	N/A	N/A	0.6000	N/A	0.011 to 1	0.011
87	Fluorene	N/A	11	11	N/A	N/A	0.6000	N/A	0.02 to 1	0.02
88	Hexachlorobenzene	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
89	Hexachlorobutadiene	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
90	Hexachlorocyclopentadiene	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
91	Hexachloroethane	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
92	Indeno(1,2,3-cd) Pyrene	N/A	11	11	N/A	N/A	0.6000	N/A	0.004 to 1	0.004
93	Isophorone	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
94	naphthalene	N/A	11	11	N/A	N/A	0.6000	N/A	0.11 to 2.5	0.11
95	Nitrobenzene	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
96	N-Nitrosodimethylamine	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
97	N-Nitrosodi-n-Propylamine	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0

		Step 4	Step 5			Step 6	Step 7
# in CTR	CONSTITUENT	MEC >WQO or MEC = WQO? Yes => RP	Background (Maximum Observed Value, Central Bay RMP Sites)	Governing WQO	Ambient Background Arithmetic Mean, (for Human Health Calculations)	Bckgrnd > WQO? Yes= RP NA=background not available	RP? Y = Yes, N=No, (Indterminacy: Ib = no bkgnd, Io = no WQO , Idl = all DLs >WQO)
67	Bis(2-Chloroisopropyl)Ether	No	N/A	170000		N/A	Ib,
68	Bis(2-Ethylhexyl)Phthalate	No	N/A	5.9		N/A	Ib,
69	4-Bromophenyl Phenyl Ether	No	N/A	N.Obj.		N/A	Ib, Io,
70	Butylbenzyl Phthalate	No	N/A	5200		N/A	Ib,
71	2-Chloronaphthalene	No	N/A	4300		N/A	Ib,
72	4-Chlorophenyl Phenyl Ether	No	0.0024	N.Obj.		No	Io,
73	Chrysene	No	0.00064	0.049		No	No
74	Dibenzo(a,h)Anthracene	No	0.0006	0.049		No	No
75	1,2 Dichlorobenzene	No	N/A	17000		N/A	Ib,
76	1,3 Dichlorobenzene	No	N/A	2600		N/A	Ib,
77	1,4 Dichlorobenzene	No	N/A	2600		N/A	Ib,
78	3,31-Dichlorobenzidine	No	N/A	0.077		N/A	Ib,
79	Diethyl Phthalate	No	N/A	120000		N/A	Ib,
80	Dimethyl Phthalate	No	N/A	2900000		N/A	Ib,
81	Di-n-Butyl Phthalate	No	N/A	12000		N/A	Ib,
82	2,4-Dinitrotoluene	No	N/A	9.1		N/A	Ib,
83	2,6-Dinitrotoluene	No	N/A	N.Obj.		N/A	Ib, Io,
84	Di-n-Octyl Phthalate	No	N/A	N.Obj.		N/A	Ib, Io,
85	1,2-Diphenylhydrazine	No	N/A	0.54		N/A	Ib,
86	Fluoranthene	No	0.007	370		No	No
87	Fluorene	No	0.002078	14000		No	No
88	Hexachlorobenzene	No	0.00002	0.00077		No	No
89	Hexachlorobutadiene	No	N/A	50		N/A	Ib,
90	Hexachlorocyclopentadiene	No	N/A	17000		N/A	Ib,
91	Hexachloroethane	No	N/A	8.9		N/A	Ib,
92	Indeno(1,2,3-cd) Pyrene	No	0.004	0.049		No	No
93	Isophorone	No	N/A	600		N/A	Ib,
94	naphthalene	No	0.00229	N.Obj.		No	Io,
95	Nitrobenzene	No	N/A	1900		N/A	Ib,
96	N-Nitrosodimethylamine	No	N/A	8.1		N/A	Ib,
97	N-Nitrosodi-n-Propylamine	No	N/A	1.4		N/A	Ib,

		Basin Plan Objectives				CTR Objectives						Steps in SIP Step 1
		Saltwater		Freshwater		Saltwater		Human Health				
# in CTR	CONSTITUENT	4-day	1-hr	Instantaneous Maximum	24-hr avg	CMC	CCC	Organisms only	Lowest Acute, Adjusted	Lowest Chronic Standard	Human Health?	Governing WQO
98	N-Nitrosodiphenylamine							16	0	0	16	16
99	Phenanthrene								0	0	No	N.Obj.
100	Pyrene							11000	0	0	11000	11000
101	1,2,4-Trichlorobenzene								0	0	No	N.Obj.
102	Aldrin					1.3		0.00014	1.3	0	0.00014	0.00014
103	alpha-BHC							0.013	0	0	0.013	0.013
104	beta-BHC							0.046	0	0	0.046	0.046
105	gamma-BHC					0.16		0.063	0.16	0	0.063	0.063
106	delta-BHC								0	0	No	N.Obj.
107	Chlordane					0.09	0.004	0.00059	0.09	0.004	0.00059	0.00059
108	4,4-DDT					0.13	0.001	0.00059	0.13	0.001	0.00059	0.00059
109	4,4-DDE							0.00059	0	0	0.00059	0.00059
110	4,4-DDD							0.00084	0	0	0.00084	0.00084
111	Dieldrin					0.71	0.0019	0.00014	0.71	0.0019	0.00014	0.00014
112	alpha-Endosulfan					0.034	0.0087	240	0.034	0.0087	240	0.0087
113	beta-Endosulfan					0.034	0.0087	240	0.034	0.0087	240	0.0087
114	Endosulfan Sulfate							240	0	0	240	240
115	Endrin					0.037	0.0023	0.81	0.037	0.0023	0.81	0.0023
116	Endrin Aldehyde							0.81	0	0	0.81	0.81
117	Heptachlor					0.053	0.0036	0.00021	0.053	0.0036	0.00021	0.00021
118	Heptchlor Epoxide					0.053	0.0036	0.00011	0.053	0.0036	0.00011	0.00011
119 -125	PCBs						0.03	0.00017	0	0.03	0.00017	0.00017
126	Toxaphene					0.21	0.0002	0.00075	0.21	0.0002	0.00075	0.0002
	Tributyltin	0.01	0.37						0.185	0.005	No	0.01
	Chlorpyrifos	0.0056	0.02						0.0066667	0.001867	No	0.0056
	Diazinon		0.82					0.6	0.205	0	0.6	0.6

		Step 2								Step 3
		:e or "N/A" means incomplete discharger data								
# in CTR	CONSTITUENT	Effluent Data Range; NA =>RP determined by bckgrd	Number nondetects	Total number of Samples	Average of quantified data values	Standard Deviation (SD)	Coefficient of Variance By SIP Formulas	Ave + 3*(SD)	Range of Detection Limits (DL's) for effluent data (1 value means only one DL)	MEC= Maximum Effluent Concentration (if all ND, and any DL< WQO, then lowest DL)
98	N-Nitrosodiphenylamine	N/A	1	1	N/A	N/A	0.6000	N/A	0 to 1	0
99	Phenanthrene	N/A	11	11	N/A	N/A	0.6000	N/A	0.02 to 1	0.02
100	Pyrene	N/A	11	11	N/A	N/A	0.6000	N/A	0.02 to 1	0.02
101	1,2,4-Trichlorobenzene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
102	Aldrin	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
103	alpha-BHC	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
104	beta-BHC	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
105	gamma-BHC	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
106	delta-BHC	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
107	Chlordane	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
108	4,4-DDT	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
109	4,4-DDE	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
110	4,4-DDD	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
111	Dieldrin	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
112	alpha-Endosulfan	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
113	beta-Endosulfan	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
114	Endosulfan Sulfate	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
115	Endrin	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
116	Endrin Aldehyde	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
117	Heptachlor	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
118	Heptchlor Epoxide	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
119 -125	PCBs	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
126	Toxaphene	N/A	0	0	N/A	N/A	0.6000	N/A	0	Ind.
	Tributyltin	N/A	0	0	N/A	N/A	N/A	N/A	0	Ind.
	Chlorpyrifos	N/A	0	0	N/A	N/A	N/A	N/A	0	Ind.
	Diazinon	N/A	0	0	N/A	N/A	N/A	N/A	0	Ind.

		Step 4	Step 5			Step 6	Step 7
# in CTR	CONSTITUENT	MEC >WQO or MEC = WQO? Yes => RP	Background (Maximum Observed Value, Central Bay RMP Sites)	Governing WQO	Ambient Background Arithmetic Mean, (for Human Health Calculations)	Bckgrnd > WQO? Yes= RP NA=background not available	RP? Y = Yes, N=No, (Indterminacy: Ib = no bkgnd, Io = no WQO , Idl = all DLs >WQO)
98	N-Nitrosodiphenylamine	No	N/A	16		N/A	Ib,
99	Phenanthrene	No	0.0061	N.Obj.		No	Io,
100	Pyrene	No	0.019	11000		No	No
101	1,2,4-Trichlorobenzene	Inc.	N/A	N.Obj.		N/A	Ib, Io,
102	Aldrin	Inc.	N/A	0.00014		N/A	Ib,
103	alpha-BHC	Inc.	0.000496	0.013		No	No
104	beta-BHC	Inc.	0.0004129	0.046		No	No
105	gamma-BHC	Inc.	0.0007034	0.063		No	No
106	delta-BHC	Inc.	0.000053	N.Obj.		No	Io,
107	Chlordane	Inc.	0.00018	0.00059		No	No
108	4,4-DDT	Inc.	0.00017	0.00059		No	No
109	4,4-DDE	Inc.	0.00069	0.00059		Yes	Yes
110	4,4-DDD	Inc.	0.000313	0.00084		No	No
111	Dieldrin	Inc.	0.000264	0.00014		Yes	Yes
112	alpha-Endosulfan	Inc.	0.000031	0.0087		No	No
113	beta-Endosulfan	Inc.	0.000069	0.0087		No	No
114	Endosulfan Sulfate	Inc.	0.000011	240		No	No
115	Endrin	Inc.	0.000016	0.0023		No	No
116	Endrin Aldehyde	Inc.	N/A	0.81		N/A	Ib,
117	Heptachlor	Inc.	0.000008	0.00021		No	No
118	Heptchlor Epoxide	Inc.	0.000094	0.00011		No	No
119 -125	PCBs	Inc.	N/A	0.00017		N/A	Ib,
126	Toxaphene	Inc.	N/A	0.0002		N/A	Ib,
	Tributyltin	Inc.	N/A	0.01		N/A	Ib,
	Chlorpyrifos	Inc.	N/A	0.0056		N/A	Ib,
	Diazinon	Inc.	N/A	0.6		N/A	Ib,

# in CTR	CONSTITUENT	Maximum Observed Background Value, ug/L (Central Bay RMP Sites)
2	Arsenic	2.22
4	Cadmium	0.127
5b	Chromium	4.4
6	Copper	2.455
7	Lead	0.804
	Lead for CV calculation	
8	Mercury	0.006
9	Nickel	3.5
10	Selenium	0.19
11	Silver	0.068
13	Zinc	4.6
14	Cyanide	N/A
16	2,3,7,8-TCDD (Dioxin)	N/A
17	Acrolein	N/A
18	Acrylonitrile	
19	Benzene	N/A
20	Bromoform	
21	Carbon Tetrachloride	
22	Chlorobenzene	
23	Chlordibromomethane	
24	Chloroethane	
25	2-Chloroethylvinyl Ether	
26	Chloroform	N/A
27	Dichlorobromomethane	
28	1,1-Dichloroethane	
29	1,2-Dichloroethane	
30	1,1-Dichloroethylene	
31	1,2-Dichloropropane	
32	1,3-Dichloropropylene	
33	Ethylbenzene	
34	Methyl Bromide	
35	Methyl Chloride	N/A
36	Methylene Chloride	
37	1,1,2,2-Tetrachloroethane	
38	Tetrachloroethylene	
39	Toluene	N/A
40	1,2-Trans-Dichloroethylene	
41	1,1,1-Trichloroethane	
42	1,1,2-Trichloroethane	
43	Trichloroethylene	
44	Vinyl Chloride	
45	2-Chlorophenol	N/A
46	2,4-Dichlorophenol	N/A
47	2,4-Dimethylphenol	N/A
48	2-Methyl-4,6-Dinitrophenol	N/A
49	2,4-Dinitrophenol	N/A
50	2-Nitrophenol	N/A

51	4-Nitrophenol	N/A	
52	3-Methyl-4-Chlorophenol	N/A	
53	Pentachlorophenol	N/A	
54	Phenol	N/A	
55	2,4,6-Trichlorophenol	N/A	
56	Acenaphthene		0.0015
57	Acenephthylene		0.00053
58	Anthracene		0.0005
59	Benzidine	N/A	
60	Benzo(a)Anthracene		0.0053
61	Benzo(a)Pyrene		0.0025
62	Benzo(b)Fluoranthene		0.0046
63	Benzo(ghi)Perylene		0.006
64	Benzo(k)Fluoranthene		0.0015
65	Bis(2-Chloroethoxy)Methane	N/A	
66	Bis(2-Chloroethyl)Ether	N/A	
67	Bis(2-Chloroisopropyl)Ether	N/A	
68	Bis(2-Ethylhexyl)Phthalate	N/A	
69	4-Bromophenyl Phenyl Ether	N/A	
70	Butylbenzyl Phthalate	N/A	
71	2-Chloronaphthalene	N/A	
72	4-Chlorophenyl Phenyl Ether	N/A	
73	Chrysene		0.0041
74	Dibenzo(a,h)Anthracene		0.0006
75	1,2 Dichlorobenzene	N/A	
76	1,3 Dichlorobenzene	N/A	
77	1,4 Dichlorobenzene	N/A	
78	3,31-Dichlorobenzidine	N/A	
79	Diethyl Phthalate	N/A	
80	Dimethyl Phthalate	N/A	
81	Di-n-Butyl Phthalate	N/A	
82	2,4-Dinitrotoluene	N/A	
83	2,6-Dinitrotoluene	N/A	
84	Di-n-Octyl Phthalate	N/A	
85	1,2-Diphenylhydrazine	N/A	
86	Fluoranthene		0.007
87	Fluorene		0.002078
88	Hexachlorobenzene	N/A	
89	Hexachlorobutadiene	N/A	
90	Hexachlorocyclopentadiene	N/A	
91	Hexachloroethane	N/A	
92	Indeno(1,2,3-cd) Pyrene		0.004
93	Isophorone	N/A	
94	naphthalene		0.00229
95	Nitrobenzene	N/A	
96	N-Nitrosodimethylamine	N/A	
97	N-Nitrosodi-n-Propylamine	N/A	
98	N-Nitrosodiphenylamine	N/A	
99	Phenanthrene		0.0061
100	Pyrene		0.0051
101	1,2,4-Trichlorobenzene	N/A	

102	Aldrin	N/A	
103	alpha-BHC	N/A	
104	beta-BHC	N/A	
105	gamma-BHC	N/A	
106	delta-BHC	N/A	
107	Chlordane		0.00018
108	4,4-DDT		0.000066
109	4,4-DDE		0.00069
110	4,4-DDD		0.000313
111	Dieldrin		0.000264
112	alpha-Endosulfan		0.000031
113	beta-Endosulfan		0.000069
114	Endosulfan Sulfate		0.000011
115	Endrin		0.000016
116	Endrin Aldehyde	N/A	
117	Heptachlor		0.000019
118	Heptchlor Epoxide		0.000094
119 -125	PCBs	N/A	
126	Toxaphene	N/A	
	Tributyltin	N/A	
	Chlorpyrifos	N/A	
	Diazinon	N/A	

		Existing Permit Limits								z value=
# in CTR	CONSTITUENT	Monthly Average	Daily Average	Dilution	Acute ECA	Acute Sigma	Chronic ECA	Chronic Sigma	Human Health ECA	
6	Copper		37	9	26.905000	0.457792	15.254398	0.238018	-	
7	Lead		53	9	1,392.764000	0.554513	48.764000	0.293560	-	
8	Mercury	0.21	1	0	2.100000	0.995174	0.025000	0.593977		0.051
9	Nickel		65	9	708.500000	0.554513	39.500000	0.293560	-	
10	Selenium		50	0	5.000000	0.554513	5.000000	0.293560	-	
11	Silver		23	9	21.788000	0.554513	No Obj	0.293560	-	
13	Zinc		580	9	908.600000	0.657989	538.600000	0.356411	-	

		2.326000		Sampling Frequency (times per month) =		4		AMEL Z =	1.65
# in CTR	CONSTITUENT	Acute ECA Multiplier	Chronic ECA Multiplier	Acute LTA	Chronic LTA	Lowest LTA Value	Sigma-N	AMEL Multiplier	AMEL, Aquatic Life
6	Copper	0.382879	0.591376	10.301351	9.021086	9.021086	0.238018	1.437942	12.97
7	Lead	0.321083	0.527433	447.193141	25.71976	25.71976	0.29356	1.552425	39.93
8	Mercury	0.162092	0.299636	0.340394	0.007491	0.007491	0.593977	2.227072	0.03
9	Nickel	0.321083	0.527433	227.487457	20.83362	20.83362	0.29356	1.552425	32.34
10	Selenium	0.321083	0.527433	1.605416	2.637167	1.605416	0.29356	1.552425	2.49
11	Silver	0.321083	0.527433	6.995761	No.Obj.	6.995761	0.29356	1.552425	10.86
13	Zinc	0.268741	0.465102	244.177843	250.5042	244.1778	0.356411	1.686713	411.86

# in CTR	CONSTITUENT	AMEL Human Health		MDEL Multiplier	MDEL, Aquatic Life	MDEL, Human Health		Final Permit Limits Daily Maximum ug/L	Monthly Average, ug/L	303(d) listed?
				MDEL Z=	2.326000					
6	Copper	-		2.611793	23.561212	-		23.56121196	12.97179922	Yes
7	Lead	-		3.114457	80.103111	-		80.10311148	39.92799542	
8	Mercury		0.05	6.169325	0.046214		0.14128	0.046213831	0.025	Yes
9	Nickel	-		3.114457	64.885426	-		64.88542579	32.3426261	Yes
10	Selenium	-		3.114457	5.000000	-		5	2.492287421	
11	Silver	-		3.114457	21.788000	-		21.788	10.86039166	
13	Zinc	-		3.721058	908.600000	-		908.6	411.8579705	

MERCURY MASS LIMIT COMPUTATIONS					
Date [1]	Total Flow (Q) MGD [1]	Mercury Concentration (C) ug/l [1]	Mass = Q X C g/day	12-Month Avg. Load , MAML, g/day [2]	12-Month Avg. Load MAML kg/month
Jan-99	0.70	0.200	0.527		
Feb-99	1.01	0.200	0.765		
Mar-99	0.78	0.200	0.592		
Apr-99	0.70	0.200	0.532		
May-99	0.66	0.200	0.498		
Jun-99	0.62	0.200	0.470		
Jul-99	0.60	0.200	0.458		
Aug-99	0.61	0.200	0.463		
Sep-99	0.60	0.200	0.457		
Oct-99	0.61	0.200	0.465		
Nov-99	0.75	0.200	0.568		
Dec-99	1.11	0.004	0.017	**0.484**	**0.0147**
Jan-00	0.94	0.004	0.014	**0.442**	**0.0134**
Feb-00	1.30	0.004	0.021	**0.380**	**0.0115**
Mar-00	0.91	0.004	0.015	**0.331**	**0.0101**
Apr-00	0.76	0.006	0.018	**0.289**	**0.0088**
May-00	0.74	0.005	0.013	**0.248**	**0.0076**
Jun-00	0.71	0.003	0.008	**0.210**	**0.0064**
Jul-00	0.67	0.002	0.006	**0.172**	**0.0052**
Aug-00	0.64	0.004	0.009	**0.134**	**0.0041**
Sep-00	0.64	0.005	0.012	**0.097**	**0.0030**
Oct-00	0.64	0.004	0.011	**0.059**	**0.0018**
Nov-00	0.60	0.003	0.006	**0.012**	**0.0004**
Dec-00	0.61	0.008	0.017	**0.013**	**0.0004**
Jan-01	0.84	0.005	0.016	**0.013**	**0.0004**
Feb-01	1.25	0.008	0.035	**0.014**	**0.0004**
Mar-01	0.82	0.002	0.007	**0.013**	**0.0004**
Apr-01	0.79	0.003	0.008	**0.012**	**0.0004**
May-01	0.66	0.003	0.008	**0.012**	**0.0004**
Jun-01	0.65	0.003	0.008	**0.012**	**0.0004**
Jul-01	0.67	0.014	0.035	**0.014**	**0.0004**
Aug-01	0.64	0.010	0.023	**0.016**	**0.0005**
Sep-01	0.64	0.012	0.029	**0.017**	**0.0005**
Oct-01	0.66	0.003	0.009	**0.017**	**0.0005**
Nov-01	0.69	0.004	0.010	**0.017**	**0.0005**
Dec-01	0.68	0.005	0.013	**0.017**	**0.0005**

Count, n of 12-month moving average mass loads (MAM	**25**	
Maximum 12-month MAMLs	**0.484**	**grams per day (g/day)**
Maximum 12-month MAMLs	**0.015**	**kilograms per month (kg**
Average 12-month MAML	**0.122**	**g/day**
Data distribution of 12-month moving average mass load	**Assumed Normal**	
Standard Deviation, MAML	**0.153**	
Mean, MAML	**0.122**	
Mean + 3 STDEV, MAML	**0.582**	**g/day**
	0.018	**kg/mo**
Mercury Mass Emission Limit =	**0.018**	**kg/mo**

Salinity, 1993-2000.

Station Code	Station Location	Date	Cruise	Salinity (by SCT) o/oo
BC41	Point Isabel	Mar-93	1993-03	13.9
BC41	Point Isabel	May-93	1993-05	24.7
BC41	Point Isabel	Sep-93	1993-09	29.4
BC41	Point Isabel	Feb-94	1994-01	28.1
BC41	Point Isabel	Apr-94	1994-04	28.1
BC41	Point Isabel	Aug-94	1994-08	29.2
BC41	Point Isabel	Feb-95	1995-02	12
BC41	Point Isabel	Apr-95	1995-04	17.2
BC41	Point Isabel	Aug-95	1995-08	27.8
BC41	Point Isabel	Feb-96	1996-02	14.7
BC41	Point Isabel	Apr-96	1996-04	16
BC41	Point Isabel	Jul-96	1996-07	21.9
BC41	Point Isabel	Jan-97	1997-01	11.6
BC41	Point Isabel	Apr-97	1997-04	NA
BC41	Point Isabel	Jul-97	1997-07	29.6
BC41	Point Isabel	Jan-98	1998-01	18
BC41	Point Isabel	Apr-98	1998-04	13.7
BC41	Point Isabel	Jul-98	1998-07	25.7
BC41	Point Isabel	Feb-99	1999-02	20.3
BC41	Point Isabel	Apr-99	1999-04	21.2
BC41	Point Isabel	Jul-99	1999-07	29.5
BC41	Point Isabel	Feb-00	2000-02	22.9
BC41	Point Isabel	Jul-00	2000-07	29
		Max, Pr. Isabel		29.6
		Min, Pt. Isabel		11.6
		Average, Pt. Isabel		22.02
BC30	Richardson Bay	Mar-93	1993-03	16.5
BC30	Richardson Bay	May-93	1993-05	28.2
BC30	Richardson Bay	Sep-93	1993-09	30.4
BC30	Richardson Bay	Feb-94	1994-01	28.7
BC30	Richardson Bay	Apr-94	1994-04	29.4
BC30	Richardson Bay	Aug-94	1994-08	28.8
BC30	Richardson Bay	Feb-95	1995-02	12.800
BC30	Richardson Bay	Apr-95	1995-04	21.800
BC30	Richardson Bay	Aug-95	1995-08	26.700
BC30	Richardson Bay	Feb-96	1996-02	16.8
BC30	Richardson Bay	Apr-96	1996-04	18.2
BC30	Richardson Bay	Jul-96	1996-07	23.6
BC30	Richardson Bay	Jan-97	1997-01	13.6
BC30	Richardson Bay	Apr-97	1997-04	NA
BC30	Richardson Bay	Jul-97	1997-07	29.3
BC30	Richardson Bay	Jan-98	1998-01	22.6
BC30	Richardson Bay	Apr-98	1998-04	16.8
BC30	Richardson Bay	Jul-98	1998-07	26.8
BC30	Richardson Bay	Feb-99	1999-02	22.6
BC30	Richardson Bay	Apr-99	1999-04	24.7
BC30	Richardson Bay	Jul-99	1999-07	30.3
BC30	Richardson Bay	Feb-00	2000-02	25.8
BC30	Richardson Bay	Jul-00	2000-07	30.5
		Max, Richardson Bay		30.5
		Min, Richardson Bay		12.8
		Average, Richardson Bay		23.86
BC10	Yerba Buena Isla	Mar-93	1993-03	16.1
BC10	Yerba Buena Isla	May-93	1993-05	26.9
BC10	Yerba Buena Isla	Sep-93	1993-09	29.6
BC10	Yerba Buena Isla	Feb-94	1994-01	28
BC10	Yerba Buena Isla	Apr-94	1994-04	28.4
BC10	Yerba Buena Isla	Aug-94	1994-08	29.2
BC10	Yerba Buena Isla	Feb-95	1995-02	13.5
BC10	Yerba Buena Isla	Apr-95	1995-04	18.6
BC10	Yerba Buena Isla	Aug-95	1995-08	27.9
BC10	Yerba Buena Isla	Feb-96	1996-02	15.5
BC10	Yerba Buena Isla	Apr-96	1996-04	19

Notes:

E = estimated value unreliable due to meter/probe problems, .
NA = not analyzed/not available,
ND = not detected, NS = not sampled,
P = low precision (>30% of field value),
Q = Outside the QA limit,
r = low recovery
Salinity (by Salinometer) for 1995 and 1996 was reported in o/oo.
Varying methods of measurement were used in 1997.

Salinity, 1993-2000.

Station Code	Station Location	Date	Cruise	Salinity (by SCT) o/oo	Notes:
BC10	Yerba Buena Isla	Jul-96	1996-07	22.6	
BC10	Yerba Buena Isla	Jan-97	1997-01	11.8	
BC10	Yerba Buena Isla	Apr-97	1997-04	NA	
BC10	Yerba Buena Isla	Jul-97	1997-07	29.9	
BC10	Yerba Buena Isla	Jan-98	1998-01	21.1	
BC10	Yerba Buena Isla	Apr-98	1998-04	17.6	
BC10	Yerba Buena Isla	Jul-98	1998-07	25	
BC10	Yerba Buena Isla	Feb-99	1999-02	16.7	
BC10	Yerba Buena Isla	Apr-99	1999-04	24	
BC10	Yerba Buena Isla	Jul-99	1999-07	29.1	
BC10	Yerba Buena Isla	Feb-00	2000-02	25.2	
BC10	Yerba Buena Isla	Jul-00	2000-07	29.6	
	Max., Yerba Buena Island			29.9	
	Min, Yerba Buena Island			11.8	
	Avg, Yerba Buena Island			22.97	
Values for all stations					
			Max	30.5	
			Min	11.6	
			Average	22.95	

Constituent	Reference for applicable standard	Maximum compliance schedule allowed	Compliance date and Basis
Cyanide (CCC of 1 ppb)	NTR	5 years	**May 18, 2003** because background date not adequate. Time needed to collect more background and possibly for SSO (**plus 5-yr** in finding not to go beyond May 18, 2010). Basis is SIP 2.2.2.
Copper (salt), Selenium	CTR (NTR for Se)	5 years	**5-yr from effective date of permit** (but not to go beyond May 18, 2010). Bases are CTR and SIP.
Mercury,	Numeric Basin Plan using SIP methodology	10 years	**March 31, 2010,** which is 10 years (using full months) from effective date of SIP (April 28, 2000). Basis is the Basin Plan, see note [1].
Other priority pollutants on CTR/NTR and not listed above	CTR/NTR	5 years	**5-yr from effective date of permit** (but not to go beyond May 18, 2010). Basis is the CTR and SIP.

Revised May 1, 2001

[1] The Basin Plan provides for a 10-year compliance schedule for implementation of measures to comply with new standards as of the effective date of those standards. This provision has been construed to authorize compliance schedules for new interpretations of existing standards, such as the numeric and narrative water quality objectives specified in the Basin Plan, if the new interpretations result in more stringent limits than in the previous permit.

a.

For numeric objectives, due to the adoption of the SIP, the Regional Board has newly interpreted these objectives. The effective date of this new interpretation is the effective date of the SIP (April 28, 2000) for implementation of these numeric Basin Plan objectives.

b. For narrative objectives, the Board must newly interpreted these objectives using best professional judgement for each permit. Therefore, the effective date of this new interpretation will be the effective date of the permit.

Attachment E.
Discharger Feasibility Study
May 18, 2002

SANITARY DISTRICT NO. 5 OF MARIN COUNTY
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Carlee Bennett, District Secretary

May 13, 2002

Regional Water Quality Control Board
San Francisco Region
1515 Clay Street, Suite 1400
Oakland, CA 94612-1404

Attention: Loretta Barsamian
Executive Officer

Subject: Sanitary District No. 5 of Marin County Infeasibility Study

Dear Ms. Barsamian,

The enclosed feasibility analyses and resulting requests for compliance schedule and interim limits are submitted to the Regional Water Quality Control Board (RWQCB) by Sanitary District No. 5 of Marin County to demonstrate the District's inability to comply with the proposed water-quality based effluent limit for mercury.

Background

The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (known as the State Implementation Policy (SIP), March, 2000) establishes statewide policy for NPDES permitting. The SIP provides for the situation where an existing NPDES discharger cannot immediately comply with an effluent limitation derived from a California Toxics Rule (CTR) criterion. The SIP allows for the adoption of interim effluent limits and a schedule to come into compliance with the final limit in such cases. To qualify for interim limits and a compliance schedule, the SIP requires that an existing discharger demonstrate that it is infeasible to achieve immediate compliance with the CTR-based limit.

The term "infeasible" is defined in the SIP as "not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors."

The SIP requires that the following information be submitted to the Regional Board to support a finding of infeasibility:

(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
(b) documentation of source control and/or pollution minimization efforts currently under way or completed;

(c) a proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
(d) a demonstration that the proposed schedule is as short as practicable.

The SIP requires that interim numeric effluent limits be based on (a) current treatment facility performance or (b) limits in the existing permit, which ever is more stringent.

The SIP also requires that compliance schedules be limited to specific time periods, depending on whether the pollutant is on the 303(d) list. For pollutants not on the 303(d) list, the maximum length of the compliance schedule is 5 years from the date of permit issuance. For pollutants on the 303(d) list (where a TMDL is required to be prepared), the maximum length of the compliance schedule is 20 years from the effective date of the SIP (March 2000). To secure the TMDL-based compliance schedule, the discharger must make commitments to support and expedite development of the associated TMDL.

The following analysis pertains to the proposed water-quality-based effluent limits proposed in the Draft Tentative Order dated April 30, 2002.

Pollutants to be Evaluated

The pollutants for which interim limits are proposed for the District are as follows:

- Copper
- Mercury
- Selenium
- Silver
- Cyanide

The draft tentative order contains no final effluent limits for cyanide and proposes an interim limit of 25 µg/L. This is based on the understanding that a regional study is underway to develop a site specific objective for cyanide and that, therefore, there is no applicable standard for use in calculating cyanide effluent limitations. The District will participate in and support the regional study as required by Provision # 2 of the draft tentative order. It is our understanding that no feasibility analysis is necessary for cyanide while a site specific objective is under development. Therefore, the rest of this analysis addressed only copper mercury, selenium, and silver.

Final Effluent Limit Attainability

The proposed final effluent limits contained in the draft tentative order for copper, mercury, selenium, and silver are compared to the maximum observed effluent concentrations for these constituents in the table below.

Pollutant	Water Quality Based Effluent Limits		Sanitary District No. 5 Effluent Quality
	AMEL[1]	MDEL[2]	MEC[3]
Copper	13	23.6	24

Mercury	0.025	0.046	0.014
Selenium	2.5	5	5
Silver	10.9	21.8	14

All values in µg/L.
[1]AMEL: average monthly effluent limit
[2]MDEL: maximum daily effluent limit
[3]MEC: maximum effluent concentration

The final effluent limits shown above are calculated using procedures described in Section 1.4 of the SIP. Background values (maximum values) were derived from Regional Monitoring Program data collected at two Central Bay stations (Yerba Buena Island and Richardson Bay). Dilution values used in the calculation of final effluent limits were as follows:

(1) dilution = 10:1 for non-bioaccumulative pollutants (copper and silver). Note that for cyanide, the dilution credit was eliminated because the ambient water was assumed to exceed the water quality objective of 1.0 µg/L.
(2) dilution = zero for 303(d) listed bioaccumulative pollutants (mercury and selenium)

Other variables in the effluent limit calculation included coefficients of variation for different pollutants in different effluents, and freshwater versus saltwater objectives based on ambient salinity.

Maximum observed effluent concentrations are based on recent plant effluent quality data (1999-2001). As shown in the table above, the District may not be able to immediately comply with proposed water-quality-based effluent limits for copper, selenium and silver. In addition, an interim limit for mercury is requested based on the understanding that a final effluent limit will be derived based on the District's WLA contained in the mercury TMDL when it is completed. The feasibility analysis for these constituents is discussed below.

Source Control and Pollution Prevention Efforts

The District has not previously been required to develop or implement pretreatment, source control, or pollution prevention programs. This is because the discharger is a small (<1 MGD), deepwater discharger with no industrial dischargers. The District's service area is almost entirely residential. However, the District has initiated the following pollution prevention activities:

- The District is a founding member and continues to participate in the North Bay Watershed Association
- The District participates in the SFEI RMP, the Bay Area Pollution Prevention Group (BAPPG), and in the North Bay Dischargers Association
- The District has recently initiated the process to join BACWA
- The District has recently begun working with Central Marin Sanitation Agency and Las Gallinas Sanitary District to staff their school outreach program. The District is also planning to begin providing this program to schools in its service area.

The District was able to comply with its previous permit limits and, therefore, has not conducted any studies to identify pollutant levels in its influent or sources of pollutants to its influent. A first step in a

source control plan for all of the constituents discussed below will be to collect influent data. Additional information for each constituent is discussed below.

Copper

The maximum observed effluent concentration for copper is 24 µg/L (measured in October 2000) which exceeds both the proposed MDEL of 23.6 and AMEL of 13. In addition, there are approximately 11 samples taken since September 2000 that were below a detection limit of 20. For these samples it is also possible that the AMEL was exceeded. Therefore, while it appears that the District will have difficulty complying with the proposed limit, there is insufficient data to confidently assess the District's ability to comply with the proposed limits.

The proposed plan to address copper compliance issues will be to first collect influent and effluent data using lower detection limits. Sampling will be conducted twice a month for the first year. Once 24 samples are collected, sampling frequency will revert to the schedule specified in the Self Monitoring Program. If, after the first year of data collection (starting when the permit is adopted and collecting samples twice a month), the results indicate that compliance with final limits is problematic, a source control program will be developed to identify influent copper sources and implement programs to address these sources.

Mercury

Mercury is 303(d) listed and will be the subject of a TMDL. Final effluent limits for this pollutant will be derived from the wasteload allocation established under the TMDL. The final effluent limit listed above for this pollutant is projected to change based on the results of the TMDL and wasteload allocation. Available information indicates that mercury is a legacy pollutant in San Francisco Bay resulting from past activities and that ongoing loadings from POTWs are not a significant source of this pollutant. As a result, costly measures for either advanced treatment or zero discharge to control mercury loading from POTWs are not expected to be required. Certainly, such actions would not be initiated until TMDLs are completed.

Given that POTWs do not appear to be a significant source of mercury in the Bay, in addition to the District's existing high quality effluent, residential service area, and favorable discharge location, it is not immediately evident the extent to which additional pollution prevention efforts would be effective or have any detectable beneficial impact on the receiving water. However, the District is prepared in the interim until the TMDL is completed, utilizing available existing staff and resources, to initiate pollution prevention actions for mercury. The District will:

- Monitor its influent for mercury using clean sampling techniques and analytical techniques using low detection limits.
- Contribute to development of the mercury TMDL through membership in Bay Area Clean Water Agencies (BACWA)
- Continue to participate in the Bay Area Pollution Prevention Group (BAPPG)
- Review white papers, policies and procedures developed by the BAPPG and evaluate feasibility and potential effectiveness of activities for the District
- Initiate identification of potential commercial and residential sources of mercury in its service area, relying on BAPPG assistance, including quantifying dentists and doctors offices.

Should mercury effluent levels exceed the proposed final limit of 0.025 at some point in the future, the District will implement the following source control activities:

- Based on information from the source identification, educate owner/operators of sources of mercury discharge using BAPPG information regarding best management practices (BMPs)
- Support regional efforts to reduce residential sources of mercury which target exchange of fluorescent lights and thermometers
- Monitor changes in the Disrict's influent and effluent resulting from these efforts, and evaluate next steps
- Prepare a specific time schedule for completing these various activities over a period of five years

Selenium

Selenium was detected once in the District's effluent at a concentration of 5 µg/L which exceeds the proposed AMEL and equals the proposed MDEL. Therefore, the District may have difficulty consistently complying with the proposed effluent limit. The District has not previously had any reason to consider selenium a concern and, therefore, has not conducted any source identification or control actions for selenium. The District proposes to begin monitoring its influent and continue monitoring its effluent using low detection limits to further characterize influent and effluent quality. Sampling will be conducted twice a month for the first year. Once 24 samples are collected, sampling frequency will revert to the schedule specified in the Self Monitoring Program. If, after the first year of data collection (starting when the permit is adopted and collecting samples twice a month), effluent selenium levels have exceeded the proposed limit of 2.5 µg/L, then a source control program targeting selenium sources will be developed and implemented.

Silver

Silver was detected in the District's effluent at a maximum concentration of 14 µg/L which exceeds the proposed AMEL. Therefore, the District may have difficulty consistently complying with the proposed effluent limit. The District has not previously had any reason to consider silver a concern and, therefore, has not conducted any source identification or control actions for silver. The District proposes to begin monitoring its influent and continue monitoring its effluent using low detection limits to further characterize influent and effluent silver levels. Sampling will be conducted twice a month for the first year. Once 24 samples are collected, sampling frequency will revert to the schedule specified in the Self Monitoring Program. If, after the first year of data collection (starting when the permit is adopted), effluent silver levels have exceeded the proposed AMEL, then a source control program targeting silver sources will be developed and implemented.

Summary

This evaluation indicates that immediate compliance with projected final effluent limits for copper, mercury, selenium and silver is not feasible for the District.

In accordance with the requirements of the SIP, the District requests that the Regional Board refrain from the adoption of final effluent limits for these constituents. In lieu of final limits, the NPDES permit should include the interim performance based limits listed below:

Pollutant	Proposed IPBL (µg/L)
Copper	30
Mercury	0.087
Selenium	50
Silver	156

The IPBLs for copper and silver were determined using effluent data from 1999-2001 using methods consistent with the Regional Board's recommended methodology as discussed below. Insufficient detected data was available to determine a statistically based IPBL for selenium. Therefore, the interim limit is the limit in the previous permit. The interim limit for mercury is based on the pooled Bay Area data for secondary treatment plants.

For copper and silver, the distribution of the data was evaluated using normal probability plots and regression statistics. Because some of the data were below detection, summary statistics and interim permit limits were calculated using the method of Helsel and Cohn (1988) which appears to be consistent in concept with the Regional Board's recommended "log-Probit method" for estimating IPBLs from data sets with data below detection. This method was used to estimate values three standard deviations above the mean of the untransformed and Ln-transformed data (equivalent to the 99.87th percentile), as specified in the Regional Board's method. The value estimated using the untransformed data is equivalent to the IPBL with no further calculations. The value based on the Ln-transformed data is back-transformed (exponentiated) to the original concentration units to provide the IPBL. The summary statistics and calculated IPBLs are shown below:

Summary Statistics and Recommended Interim Performance-Based Limits (IPBLs)

Statistic	Copper, µg/L		Selenium, µg/L		Silver, µg/L	
	Untrans-formed data	Ln(x)	Untrans-formed data	Ln(x)	Untrans-formed data	Ln(x)
n	36	NA	17	NA	12	NA
Percent detected	61.1%	NA	5.9%	NA	50.0%	NA
n detected	22	NA	1	NA	6	NA
Minimum Detected Value	5.2	NA	5	NA	0.3	NA
Maximum Detected Value	24	NA	5	NA	14	NA
Minimum Reporting Limit	2	NA	1	NA	0.2	NA
Maximum Reporting Limit	20	NA	20	NA	10	NA
Mean	8.973	2.096	ID	ID	2.617	0.047
Standard Deviation	4.778	0.431	ID	ID	4.661	1.668
R^2 for dist'n regression fit	0.75	0.88	ID	ID	0.89	0.98
IPBL Basis	µ + 3σ	e^(µ+3σ)	µ + 3σ	e^(µ+3σ)	µ + 3σ	e^(µ+3σ)
Est'd IPBLs	23.3	29.6	Insufficient detected data		16.6	156.4
Recommended IPBLs	**30 µg/L**		Insufficient detected data		**156 µg/L**	

A proposed schedule for characterizing the District's influent and effluent and conducting source identification and control activities is summarized below:

Proposed Action	Start Date	Time to complete

1. Collect influent and effluent data with low detection limits for Cu, Hg, Ag, Se	July 2002	Ongoing during permit term
2. Continue participation in BAPPG, regional studies	Ongoing	Ongoing
3. Initial assessment of compliance with final limits	July 2004	2 months
4. Develop P2 program and implementation schedule for constituents with compliance issues	September 2004	6 months
5. Initiate P2 programs as appropriate	March 2005	According to schedule developed in 4.

This completes our submittal. Please feel free to contact me at (415) 435-1501 for further information.

Very Truly Yours,

Henrik Olsgaard

Henrik Olsgaard
Acting District Manager

Attachment F.
Discharger Comments
July 19, 2002

SANITARY DISTRICT NO. 5 OF MARIN COUNTY
2001 PARADISE DRIVE
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Henrik Olsgaard, Acting District Manager
Carlee Bennett, District Secretary

July 19, 2002

Ms. Loretta Barsamian
Executive Officer
Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Comments on Tentative Order for NPDES Permit No. CA0037753 for Sanitary District No. 5, Marin County

Dear Ms. Barsamian:

Thank you for the opportunity to provide comments on the proposed Tentative Order. The District appreciates the efforts of Mr. Ken Katen of your staff to work with the District in the development of the proposed NPDES permit.

As you know, the District takes its role as a wastewater treatment agency very seriously. The District has maintained a strong history of compliance with the requirements prescribed in its existing NPDES permit and fully intends to continue that record. The District has been a long time contributor to the San Francisco Bay Regional Monitoring Program and has recently joined the Bay Area Clean Water Agencies as an affiliate member. The District will continue to participate in and support collaborative efforts that lead to effective management of water quality in San Francisco Bay. As a public agency responsible to local rate payers, the District will also continue to provide feedback to the Regional Board if it appears that proposed permit requirements are not warranted on the basis of equity, effectiveness or reasonableness.

Description of District's Discharge

As noted in the proposed permit findings, the District discharges secondary effluent to Central San Francisco Bay. The District discharges through a high rate diffuser at a depth of 84 feet into Raccoon Straits, an area of strong currents and mixing due to its proximity to the Golden Gate. The treated effluent is rapidly mixed with Bay waters, achieving an estimated initial dilution of 1400 to 1.

The District's average dry weather flow (ADWF) (average flow in lowest three consecutive dry season months) in 1999, 2000, and 2001 ranged from 0.61 to 0.65 million gallons per day (mgd). The rated capacity of the District's treatment facility is 0.98 mgd. In comparison to other municipal discharges to San Francisco Bay (total discharge exceeds 600 mgd), the District's actual flow represents approximately 0.1

percent of the treated municipal discharge to the Bay. With regard to total loadings to the Bay, the District's discharge is a much smaller fraction, given that the total treated municipal loading of most pollutants to the Bay are generally recognized to be a small percentage of the total (USEPA, California Toxics Rule Supporting Information, 2000).

The proposed permit states that the District's discharge has been classified by USEPA and the Regional Board as a major discharge. We request that this classification be reviewed and modified, if possible. If re-classification is not possible, we request that language be added to Finding 5 of the permit to clarify that the location, nature and magnitude of the District's discharge are such that its effect on Bay water quality are minor.

We have the following additional comments regarding the proposed Order and supporting documents. We note that the proposed permit will impact the District in several key areas, including (a) new or revised effluent limits, (b) new special studies, and (c) changes in self-monitoring requirements, as described below.

Effluent Limits

The proposed permit includes new or revised effluent limits for the following pollutants:

- Copper
- Lead
- Mercury
- Nickel
- Selenium
- Silver
- Zinc
- Cyanide

Three of the effluent limits in the existing permit (for copper, selenium and silver) are being adopted as interim limits in the proposed permit. In addition, a new interim limit for mercury is being established. These interim limits are required because the Feasibility Analysis prepared on behalf of the District indicated that identified final effluent limits for these pollutants cannot be immediately attained. The District is supportive of the proposed adoption of these interim limits.

The proposed permit eliminates effluent limits for the following pollutants which were included in the previous permit: arsenic, cadmium, chromium, phenols, and PAHs. The District supports the Regional Board's findings that effluent limits are not required for these pollutants.

Specific concerns regarding effluent limits

The District wishes to express its concern with several provisions of the proposed permit which relate to effluent limits, including (1) effluent limits for bio-accumulative pollutants, (2) continued use of a 10:1 dilution credit in effluent limit derivations, and (3) use of narrative water quality objectives and/or Best Professional Judgment to set numeric effluent limits.

Effluent limits for bio-accumulative pollutants

As a matter of policy and procedure, the District does not agree with the imposition of water quality-based effluent limits for bio-accumulative pollutants prior to the adoption of a TMDL for these pollutants. In brief, the District understands that the basis for concern for bio-accumulative pollutants relates to the levels of these pollutants in fish and shellfish. The District endorses use of tissue criteria, adopted in accordance with California laws and regulations, for the regulation of bio-accumulative pollutants. The use of water column concentrations (e.g. total mercury) to regulate levels in fish and shellfish is unproductive and is not supported by scientific evidence. The District believes that the only defensible approach to permitting bio-accumulative pollutants is through waste load allocations established in the TMDL process, which account for all sources and addresses the linkage between sources and fish tissue levels.

The District also does not agree with the decision to eliminate dilution credits for bio-accumulative pollutants. Since the concentration of these pollutants at the District's point of discharge has no demonstrable effect on bioaccumulation in fish tissue in San Francisco Bay, the establishment of concentration-based effluent limits for these pollutants is inappropriate. The elimination of dilution credit in the calculation of such limits further complicates this issue, has no benefit to the Bay, and may cause unwarranted compliance problems for the District in the future.

Finally, the District objects to the proposed imposition of interim mass limits for bio-accumulative pollutants (e.g. mercury). The District believes that such limits are unnecessary and fail to consider the de minimis nature of the District's loading to the Bay. The District again advocates that mass limits in NPDES permits for bio-accumulative pollutants be derived through a science-driven TMDL process.

Dilution Credit

The District strongly disagrees with the continued application of a 10:1 dilution credit in the calculation of NPDES water quality-based effluent limits. As stated in the fact sheet and permit findings, the District's discharge receives an actual dilution (1400:1) which exceeds the artificial dilution cap by more than 2 orders of magnitude. The District requests that the Regional Board take the specific facts regarding dilution magnitude and the location and magnitude of the District's discharge into account in the assignment of a dilution credit for effluent limit calculations. The District takes exception to the arguments stated in the Fact Sheet in support of the retention of a 10:1 dilution cap on the

discharge. The ambient stations cited as "clean" sampling sites reflect the actual ambient background water quality conditions for the District's discharge. Mathematical modeling tools are available that can reliably predict the impact of the District's discharge in the Bay.

Use of Narrative Objectives / Best Professional Judgment

The District disagrees with the proposed use of Basin Plan narrative toxicity or narrative bioaccumulation objectives or Best Professional Judgment as the basis for the establishment of numeric effluent limits for specific pollutants in the District's permit. The District asserts that such practice is improper in California in the absence of either (a) adopted numeric objectives or (b) clear statements of the means by which narrative objectives would be used to set numeric effluent limits in NPDES permits, as required by USEPA regulations (40 CFR 131.11(a)(2)).

Special Studies

The proposed permit requires the District to perform the following special study activities that were not required in the previous permit.

- Participate in regional discharger-funded effort to establish a site-specific objective (SSO) for cyanide and to monitor cyanide ambient background levels in Bay waters in accordance with a study plan submitted by BACWA on October 29, 2001.
- Monitor and evaluate effluent for specified toxic pollutants in accordance with the Regional Board's August 6, 2001 Water Code Section 13267 letter.
- Participate in ambient background monitoring effort consistent with a September 28, 2001 study plan submitted by BACWA.
- Perform Pollutant Minimization Program (PMP) studies and activities
- Acute toxicity testing – Either submit a technical report identifying reasons why flow-through bioassay testing using the USEPA 4th edition test procedures is not feasible or switch from 3rd to 4th edition procedures after September, 2003.
- Chronic Toxicity Requirements – Develop a toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) work plan, perform routine monitoring, perform accelerated monitoring if a trigger value is exceeded, and implement the TIE/TRE if triggers continue to be exceeded.
- Continue participation in the Regional Monitoring Program for trace substances in San Francisco Bay.
- Participate in TMDL or site-specific objective development work for copper, mercury, selenium, 4,4-DDE and dieldrin.

The District is supportive of the concept of collaborative, regional approaches to these studies, where possible, in lieu of duplicative requirements on individual dischargers. The District is working through BACWA on collaborative efforts on a number of the above listed topics.

The proposed permit also includes the following optional studies by the District:

- Fecal coliform limit
- Copper translator
- Mercury offsets

The District may consider performance of studies to gain Regional Board approval for a switch from total to fecal coliform effluent limits, as allowed in the proposed permit. Potential chemical cost savings, the cost of the required demonstration studies and co-participation by SASM will influence the District's decision to move forward with the coliform studies. The District is collaborating with BACWA agencies on studies to derive a copper translator for the Bay north of Dumbarton Bridge. It is not likely that the District will individually pursue mercury offset studies.

Increased Self-Monitoring Requirements

The proposed permit includes the following changes in self-monitoring requirements.

- Monthly metals versus quarterly
- 3 per week influent and effluent BOD and TSS versus weekly
- Chronic toxicity testing – 2 tests over 5 year permit term

The District acknowledges and appreciates that, in most cases, Regional Board staff has attempted to keep the District's self-monitoring requirements proportional to the size and impact of the District's discharge to the Bay. However, the District requests that the following changes to the proposed monitoring requirements be made:

- Leave the required BOD and TSS monitoring frequency at once per week, as it is in the existing permit. The proposed increase in BOD and TSS influent and effluent monitoring is not warranted, on the grounds that (a) the increased monitoring is inconsistent with the requirements recently adopted in the NPDES permit for SASM, (b) the District has an excellent compliance record for BOD and TSS, (c) the District's discharge is small, is highly diluted at the discharge point in over 80 feet of water, has no effect on dissolved oxygen or TSS levels in the Bay, and (d) therefore does not warrant the extra expenditure ($42,000 for increased BOD and TSS analytical costs) over the life of the permit.

- Regarding oil and grease monitoring, the District requests that the sampling approach remain as stated in the current permit, i.e. base results on three grab samples, evenly spaced over the period of manned operation of the treatment facility, which are composited in proportion to flow occurring at the time of the sampling.

- Regarding the requirement to perform chronic toxicity screening work described in Attachment A to the Self Monitoring Report, it is requested that the District be allowed to use the screening results from another facility discharging to this

segment of the Bay (e.g. Sausalito-Marin City or CMSA) in lieu of performing a separate testing program. We do not believe that such a resource intensive program is warranted based on the magnitude, nature and location of the District's discharge.

Editorial Changes

The District requests that the following language changes be made to correct inaccuracies in the permit language:

- Finding 5 of Permit and Fact Sheet (page 3) – The language should be revised to indicate that both the District and SASM dechlorinate prior to combining flows in the common outfall. Dechlorination does not occur after flow combination.

- Self Monitoring Program, Item IV.C.6., page 14 – The language should be revised to state that the District does not currently submit its monthly data reports electronically. The District would need to expend significant time and resources to switch to the electronic submittal format, and requests that electronic reporting be retained as an option rather than as a requirement.

- Fact Sheet – The language should be revised to state that the District has not performed chronic toxicity screening studies. As noted above, the District requests that it be allowed to use the results from a similar plant to avoid performance of the screening study.

Again, the District appreciates the opportunity to provide these comments. Please contact me directly if you have any questions regarding the content of this letter.

Sincerely,

Henrik Olsgaard

Henrik Olsgaard
Acting District Manager

Attachment G.
Response to Discharger Comments

Response to Comments
For Item No. 10
Public Hearing
on
Sanitary District No. 5 of Marin County
Waste Water Treatment Plant
NPDES Permit Reissuance

One comment letter was received for the subject Tentative Order, from Sanitary District No. 5 of Marin County (the District), on July 19, 2002. For brevity, each District comment is summarized, and each response given, point by point, in the order presented.

Comment 1. Classification of Discharge

The District requested that its discharge be reclassified as a minor discharger instead of a major discharger.

Response 1.

Board staff will evaluate the discharge using the guidance contained in the U.S. EPA's discharge classification worksheet. Board staff will make a recommendation based on its evaluation and the recommendation will be forwarded to the U.S. EPA for approval.

Comment 2. Effluent Limits For Bioaccumulative Pollutants

Comment 2a.

The District does not agree with the imposition of water quality-based effluent limits [WQBELs] for bio-accumulative pollutants prior to adoption of the Total Maximum Daily Loads [TMDLs] for those pollutants. The District believes that bioaccumulative pollutants should only be permitted pursuant to Waste Load Allocations [WLAs] contained in an adopted TMDL.

Response 2a:

The Tentative Order does not include final water-quality-based effluent limits for any bioaccumulative pollutants. Interim control measures are necessary for bioaccumulative pollutants as an initial step toward ensuring that mass loading of these impairing pollutants, at the very least, does not increase. Mass loading is the critical measurement for bioaccumulative impairing pollutants like mercury. The impairment is due in part to high concentrations of mercury in fish tissue that led to the 1994 issuance of a fish consumption advisory for fish caught from the Bay, as distinct from exceedences of the objective in the water column. Therefore, controlling influxes of bioaccumulative pollutants from all sources, including POTWs and industries, into the impaired

waterbody is the important measurement. It is true that standards are not being met but TMDLs are being developed. The interim performance-based (technology-based) limits, both concentration and mass, are short-term measures designed to, at least, prevent further degradation of the waterbody during the process of TMDL development and implementation. State Board Order 2001-06 concluded that

> " interim, performance-based mass limits for a pollutant under a compliance schedule to achieve the applicable water quality standard for the pollutant are authorized under the Clean Water Act and state law."

Furthermore,

> "If a compliance schedule [which is discretionary] is allowed, it is entirely appropriate for the permit to include interim, performance-based mass limits to preserve the status quo and prevent further water quality degradation until the water quality standard is achieved."

Federal anti-degradation policy

> " . . . prohibits any action that would lower water quality below that necessary to maintain and protect existing uses... In cases where water quality is lower than necessary to support these uses, the requirement in Section 303(d) of the Clean Water Act, 40 CFR Part 131.10 and other pertinent regulations must be satisfied". [Guidance on Implementing the Anti-degradation Provisions of 40 CFR Part 131.12, U.S. EPA, Region 9.]

Instituting mass limits in this permit was designed to comply with federal and State Anti-degradation policy.

Comment 2b.

The District disagrees with the exclusion of dilution credits in limit calculations for bioaccumulative pollutants.

Response 2b.

Finding 27a. of the Tentative Order has been augmented to reflect the justification for denying dilution credits for bioaccumulative pollutants listed pursuant to Section 303(d) of the Clean Water Act (303(d)-listed pollutants). Finding 27a states:

> " For certain bioaccumulative pollutants, based on BPJ, dilution credit is not included in calculating the final WQBELs. The Board placed selenium, mercury, and PCBs on the CWA Section 303(d) list. The USEPA added dioxins and furans compounds, chlordane, dieldrin, and DDT on the CWA Section 303(d) list. Dilution credit is not included for the following pollutants: mercury, dieldrin, 4,4'-DDE, dioxins and furans, PCBs, chlordane, and selenium. The following factors suggest that there is no more assimilative capacity in the Bay for these pollutants.

i. San Francisco Bay fish tissue data shows that these pollutants, except for selenium and PAHs, exceed screening levels. The fish tissue data are contained in "Contaminant Concentrations in Fish from San Francisco Bay 1997" May 1997. Denial of dilution credits for these pollutants is further justified by fish advisories to the San Francisco Bay. The Office of Environmental Health and Hazard Assessment (OEHHA) performed a preliminary review of the data from the 1994 San Francisco Bay pilot study, "Contaminated Levels in Fish Tissue from San Francisco Bay." The results of the study showed elevated levels of chemical contaminants in the fish tissues. Based on these results, OEHHA issued an interim consumption advisory covering certain fish species from the bay in December 1994. This interim consumption advice was issued and is still in effect due to health concerns based on exposure to sport fish from the bay contaminated with mercury, PCBs, dioxins, and pesticides (e.g., DDT).

ii. For selenium, the denial of dilution credits is based on Bay waterfowl tissue data presented in the California Department of Fish and Game's Selenium Verification Study (1986-1990). These data show elevated levels of selenium in the livers of waterfowl that feed on bottom dwelling organisms such as clams. Additionally, in 1987 the Office of Environmental Health Hazard Assessment issued an advisory for the consumption of two species of diving ducks in the north bay found to have high tissue levels of selenium. This advisory is still in effect. "

Comment 2c.

The District claims that the concentration of bioaccumulative pollutants in the District's discharge has no demonstrable effect on fish tissue in San Francisco Bay.

Response 2c.

As noted in Response 2a, above, controlling influxes of bioaccumulative pollutants from all sources, including POTWs and industries, into the impaired waterbody is the important measure to be taken until the TMDLs, and their included WLAs, have been adopted. The District's shared outfall discharges directly into Central San Francisco Bay, and Central San Francisco Bay is listed as impaired by bioaccumulative pollutants, including mercury.

Comment 2d.

The District objects to the imposition of mass limits for bioaccumulative pollutants, including mercury, and advocates that they be included in NPDES permits pursuant to adopted TMDLs.

Response 2d.

As noted in Response 2a, above, the impairment is due in part to high concentrations of mercury in fish tissue, leading to issuance of a fish consumption advisory for fish caught from the Bay, as distinct from exceedences of the objective in the water column. Therefore, interim control measures are necessary for bioaccumulative pollutants as an initial step toward ensuring that mass loading of these impairing pollutants, at the very least, does not increase. Because mass loading is the critical measurement for bioaccumulative impairing pollutants like mercury, interim mass limits are necessary until the adoption of the TMDLs for those pollutants.

Comment 3: Dilution Credit

The District strongly disagrees with the continued application of a 10:1 dilution credit in calculating WQBELs, contending that the dilution should be higher, up to 1400:1. The District indicates that mathematical modeling tools are available to predict the impact of the District's discharge on the Bay.

Response 3:

As stated in Response 2.b, above, language of Finding 27a of the Tentative Order has been augmented to better describe the uncertainties that exist about dilution and assimilative capacity in the receiving water. Additionally, the language of Fact Sheet has been augmented to include a discussion of the 10:1 dilution at Section 4.j.i.(4), and subsequent sections of Section 4.j have been successively renumbered. Section 4.j.i.(4) discusses the uncertainties associated with existing dilution studies and the requirements for future dilution studies.

Comment 4: Use of Narrative Objectives and Best Professional Judgement

Comment 4a.

The District asserts that it is improper to use Basin Plan narrative toxicity or bioaccumulation objectives or Best Professional Judgment as the bases for establishing numeric effluent limit.

Response 4a.

The need for any specific numeric effluent limitation is based on the outcome of the reasonable potential analysis. As delineated in Table 2 of the Tentative Order, the determination for all but one of the pollutants having reasonable potential was based on exceedences of numeric Water Quality Objectives or Water Quality Criteria (WQOs or WQCs) in the discharger (Trigger 1) or background concentrations (Trigger 2). The exception was mercury, a 303(d) listed bioaccumulative pollutant. Findings 45 and 46 of the Tentative Order delineate the Best Professional Judgment used to make the reasonable potential determination for mercury by considering other information (Trigger 3). This use of Best Professional Judgment is consistent with SIP Section 1.3, which specifically lists fish tissue residue data as a factor that could cause a finding of reasonable potential; fish tissue residue data are specifically cited in the first bulleted item of Finding 45.

Comment 4b.

The District asserts it is improper to establish numeric effluent limits for specific pollutants based on narrative objectives and/or Best Professional Judgment without either adopted numeric objectives or clear statements of the means by which narrative objectives are used to set numeric limits pursuant to 40 CFR 131.11(a)(2).

Response 4b:

None of the numeric effluent limits included in the Tentative Order are calculated based on narrative objectives or Best Professional Judgment. As delineated in Table E of the Fact Sheet,

all numeric effluent limits contained in the Tentative Order are based on numeric WQOs or WQCs.

Comment 5: Special Studies

The District raised concerns about requirements or potential requirements for special studies contained in the Tentative Order, including:

1. *Site specific objective (SSO) study for cyanide and ambient background monitoring for cyanide;*
2. *Toxic pollutant monitoring pursuant to the requirements of the Board's August 6, 2001 letter;*
3. *Participation in ambient background monitoring pursuant to a September 28, 2001 study plan submitted by BACWA;*
4. *Pollutant minimization program (PMP) studies and activities;*
5. *Change acute toxicity testing methodology from U.S. EPA 3rd edition to 4th edition;*
6. *Develop and implement a Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) workplan if triggers values are exceeded;*
7. *Continued participation in the Regional Monitoring Program for Trace Substances in San Francisco Bay (the RMP); and*
8. *Participation in TMDL or SSO development work for copper, mercury, selenium, 4,4-DDE and dieldrin.*

The District supports a collaborative, regional approach to these studies where possible and is working with BACWA on collaborative efforts for a number of these topics.

Response 5:

- Board staff encourages the District to continue to seek out opportunities for collaborative studies, particularly items 1,3, 7, and 8, above.

- The monitoring requirements alluded to in item 2, above, are required under the provisions of the Board's August 6, 2001 letter and Section 13267 of the California Water Code, and not the Tentative Order. They are only recited in the Tentative Order.

- Item 4 is required pursuant to Section 2.1 of the SIP as a condition for granting a compliance schedule for the pollutants where immediate compliance with the final WQBELs is infeasible.

- Item 5, the migration from 3rd to 4th edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms* is a standard requirement of NPDES permits in the Region, and is included to encourage dischargers to use the current U.S. EPA-approved methods to conduct toxicity testing. The Provision requires Board staff to consider an exception to this requirement should the District demonstrate that it is infeasible to convert to the 4th Edition methods.

- Item 6 is a standard inclusion in current NPDES permits in the Region. Submittal of a TIE/TRE workplan before an exceedence of the chronic toxicity triggers will aid the District in resolving chronic toxicity issues more quickly should they arise.

Comment 6: Optional Studies

The District indicated it may pursue the optional studies for a fecal coliform limit, for a copper translator, and that it may not pursue the optional mercury mass offset study.

Response 6:

Comment noted.

Comment 7: Increased Self-Monitoring Requirements

Comment 7a.

The District requested that Biochemical Oxygen Demand [BOD] and Total Suspended Solids [TSS] monitoring frequency not be increased because it is inconsistent with requirements in the NPDES permit for the Sewer Authority of Southern Marin (SASM) with which it shares a common outfall, the District has an excellent compliance record for these constituents, the District's discharge is small and is highly diluted upon leaving the outfall, and therefore the additional expense of the increased monitoring over the life of the permit is not warranted.

Response 7a:

The increase from weekly to three times per week will provide better solids data, allowing the monitoring frequency for Settleable Matter to be decreased from weekly to monthly. The more frequent BOD and TSS monitoring assure that the plant will maintain proper operation and is not intended to be punitive or corrective of deficient performance. Board staff acknowledges that the NPDES permit for SASM maintains weekly sampling for TSS, BOD and Settleable Matter; ultimately, Board Staff hopes that monitoring frequencies for technology-based limits will be consistent for all dischargers in the Region. The dilution of the District's discharge does not apply to BOD and TSS because they are technology-based limits, and dilution does not affect them. Finally, in recognition that the increased BOD and TSS monitoring will cost more, the decrease in the frequency of monitoring for settleable matter from weekly to monthly, will partially offset the increased costs for BOD and TSS monitoring.

Comment 7b.

The District requested that the sampling for Oil and Grease consist of composite samples collected at equal intervals during the staffed operation of the plant, rather than the entire day of sampling.

Response 7b.

Board staff concurs, and the Self Monitoring Program of the Tentative Order has been modified to reflect the requested change.

Comment 7c.

The District requested to be allowed to use chronic toxicity screening results from a nearby wastewater treatment plant discharging to the same part of San Francisco Bay.

Response 7c.

Individual wastewater treatment plants output can vary significantly from plant to plant. The District should provide further justification for using the chronic toxicity results from a nearby wastewater treatment plant, including similarities in:

- plant processes and operation;
- chemicals used in treatment processes; and
- service area and influent characteristics.

After reviewing the justifications, Board staff will determine if using another wastewater treatment plant's chronic toxicity results is appropriate.

Comment 8: Editorial Changes

Comment 8a.

The District requested that Finding 5 of the Permit and Fact Sheet be revised to indicate that both The District and SASM dechlorinated individually before their effluents are combined.

Response 8a.

Board staff concurs, and the changes have been incorporated in the Tentative Order and Fact Sheet.

Comment 8b.

The District requests that Self Monitoring Program Item IV.C.6 be revised to clarify that the District is not currently submitting reports via the Electronic Reporting System.

Response 8b.

Board staff concurs, and the language of Self Monitoring Program Item IV.C.6 has been revised to reflect the District's current reporting status.

Comment 8c.

The District requested that Fact Sheet section 4.i. be revised to reflect that it has not previously performed chronic toxicity screening studies.

Response 8c.

Board staff concurs, and Fact Sheet section 4.i. has been revised to reflect that the District has not yet performed chronic toxicity screening studies.